A History of Public Health in New York City 1625–1866



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Frontispiece: Plan of New York in 1729. Courtesy of the New-York Historical Society, New York City.

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Preface

For several years the date, February 26, 1966, had figured significantly in the plans of the New York City Department of Health. It was to mark the Hundredth Anniversary of the formation of the Metropolitan Board of Health, the progenitor of all of the traditions of excellence that have led most New Yorkers to respect their Health Department.

Several of our present staff members had served actively during 40 of these 100 years. Their memories dwelt longingly and, I trust, accurately on former associates whose service histories skirted the earliest years. Each health officer had rediscovered for himself his own debt to his intellectual ancestors of the past century, using stirring quotations from their annual reports, still remarkably timely and prescient. In fact, so relevant were some of these statements (an entire 150-word paragraph of the letter of transmittal of the Annual Report of 1867 still offers a credo any health commissioner can accept) that the thoughtful student of public health administration is filled with curiosity to know more about the still earlier past.

The great credit for our modern health organization that has been given to the three vast cholera epidemics of 1832, 1849, and 1866 has always appeared a bit too pat. They, in turn, followed a series of devastating outbreaks, predominantly of yellow fever, but also of smallpox, typhus, and at least one of diphtheria. Hovering over all were the constant silent, but far more deadly endemic plagues of summer diarrhea and tuberculosis. Every recent New York City health officer has kept in his desk a chart showing the steady drop in tuberculosis mortality since the peak rate of 700 deaths per 100,000 population in 1812, with the rate tabulations

dating back to 1804. What events led this bustling city at that early date to tabulate deaths by cause and compile death rates? Who were those early workers who patiently began what has been the genesis of some of the most productive vital statistics studies of our public health era? Puny, indeed, becomes the picture of the effect of our control efforts against tuberculosis when measured by this 160-year record. A steady decrease in mortality was quite evident long before the discovery of the cause and effective treatment of this illness. Even after our knowledge became complete, the effect upon this inexorable trend in tuberculosis mortality is barely discernible.

Thus, it was decided to sponsor a history of public health in New York City as part of the activities of the anniversary period. We wished this history to cover far more than the very special 100 years. The total epic of health in this great city must be told, beginning with the earliest records of the Dutch settlements.

A search was begun for a highly competent medical historian. The name of John Duffy was quickly and firmly offered by our wise consultants. Discussions with Professor Duffy were brought to a rapid and successful conclusion, but one serious problem remained.

As a governmental, tax-supported agency, the City Health Department was not able to support so extensive an enterprise. A health commissioner has little hope that city appropriating bodies will provide funds for a work of scholarship in competition with community cries for more clinics, more programs for environmental sanitation, more nurses. Fortunately, Russell Sage Foundation under the leadership of its president, Dr. Donald R. Young, and his successor, Dr. Orville G. Brim, Jr., long strong supporters of the human sciences in health, came to our rescue. We now had the occasion, the mission, the author, and the funds. All that remained for us was patience, while Professor Duffy wrote.

I am delighted with the result! I have enjoyed every minute with this first volume and await the next with keen anticipation.

Professor Duffy has developed this story with masterful strokes, clearly describing the foundations on which our New York public health institutions rest. But he has done much more, which makes his book so intriguing to the public health professional.

His vignettes are delightful and present fascinating analogies to the reactions of our current era. During the early years there was a vicious campaign of killing dogs following a single human death from rabies. This occurred in the face of mass indifference to an overwhelming death rate from tuberculosis. An interesting parallel is thus presented to the widespread awe surrounding the first cardiac transplant in a foreign land, while in New York City alone, over 3,000 persons die needlessly each year from eigarettecaused cancer of the respiratory tract. In 1832 the New York County Medical Society recognized the "validity" of homeopathic medicine by admitting the founder of this method, Dr. Samuel Hahnemann, to honorary membership. Apparently the Society had to do so, and this recognition of homeopathic medicine was actually repeated by the new Metropolitan Board of Health soon after its formation in 1866. The essentially useless but harmless homeopathic treatments resulted in significantly better "cure" rates than those associated with the severe purgings, bleedings, and blistering that characterized the more standard medical practice of that era! The modern health officer may suggest that much of what Medicare and Medicaid are diligently supporting today will appear equally amusing to some future generation. The opportunity to read about the earnestness, sincerity, and mistakes of our predecessors, made more interesting by Professor Duffy's beguiling style, does deflate our egos and makes us cringe now before the future verdicts of our great-grandchildren.

Above all else, I appreciate this book and am deeply in debt to Professor Duffy for having written it, because it answers so well the most timely and crucial question in the field of health administration. Too often the health commissioner must labor under the charge that his plan for health improvement is impractical and visionary. He must, it seems, deal solely with the "art of the possible," usually defined pragmatically by what can happen within a year or so. Yet how clearly can we follow the long-term threads of the possible when gifted with perfect hindsight. What giants, such as Dr. John H. Griscom, appear upon the scene in retrospect! Their long records of courage and perseverance offer a far more persuasive career model than that of their more popular, politically wise, though now forgotten detractors.

My only personal regret is that this book was not available to me at the start of my nine exciting years with the New York City Department of Health. How fortunate, indeed, are my successors!

March 19, 1968

George James, M.D., M.P.H. Dean, Mount Sinai School of Medicine of the City University of New York Formerly Commissioner of Health, City of New York

Acknowledgments

I hope that the appearance of this history will bring a great deal of satisfaction to Dr. George James, Dean of the Mount Sinai School of Medicine, who, as Commissioner of Health for New York City, initiated the project and has since maintained an active interest in it. I hope, too, that this feeling will be shared by many other members of the New York City Health Department, including Dr. Paul M. Densen, Dr. Arthur Bushel, Dr. Carl L. Erhardt, Miss Audrey B. Livingston, and Mr. August La Rocco, the librarian, all of whom cooperated to the fullest in making this volume possible.

My greatest indebtedness is to my research assistant and associate, Miss Betty Ellen Green. During seven years of fruitful collaboration she has acquired a rare sensitivity for the delicate task of sifting and choosing from among the infinite variety of facts to be found in the voluminous historical records. With only minimal navigational direction, I have sent her forth upon countless uncharted pages of medical journals, newspapers, and official records. A native New Yorker, Miss Green's sense of personal involvement has intensified her quest for historical accuracy. She has also been my most persistent editorial critic. Any questionable generalizations may well represent those cases in which I overruled her arguments.

Miss Green and I have had the fullest cooperation from all libraries in the New York area. Both of us are especially grateful to Miss Shirley Beresford, Mr. Arthur Breton, Mr. Thomas Dunnings, and Miss Nancy Hale of the New-York Historical Society Library, and to Mrs. Alice Weaver and Mrs. Nancy Willy of the New York Academy of Medicine Library. Staff members of the Haven Emerson Library of the New York City Health Depart-

ment and the New York Public Library were always courteous and helpful.

I am heavily indebted to my two research assistants, Mr. Martin Kaufman and Mr. J. Thomas May, both of whom held Josiah Macy, Jr. Foundation Predoctoral Fellowships in 1966–1967. For the past two years they have assisted in the research, read and criticized the entire manuscript, worked on the footnotes and bibliography, and helped in many other ways. Among my colleagues and friends who read part or all of the manuscript and who gave useful suggestions are Dr. Saul Benison, historian of the National Foundation, Dr. W. David Lewis of the University of Buffalo, and Dr. Richard H. Shryock of the American Philosophical Society.

In addition to having a fine car for the English language, my secretary at the Graduate School of Public Health of the University of Pittsburgh, Miss Eleanor McLaughlin, made several valuable suggestions. I am also obligated to Mrs. Dorothy Sievers, my present secretary, who struggled through the final stages of preparing the manuscript.

I would be remiss if I did not thank the University of Pittsburgh Graduate School of Public Health and the Tulane University History Department and School of Medicine for permitting me to devote almost unlimited time to this project. I am particularly grateful to Russell Sage Foundation for its continuing financial and moral support.

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In addition to her well-played domestic roles, my wife Corinne has continued to serve as an unofficial research assistant and literary critic. A mathematician and chemist by training, she clearly demonstrates the universality of intelligence.

New Orleans, Louisiana February 15, 1968 John Duffy

Introduction

In writing a history of public health the first problem is to decide precisely what is encompassed by the term "public health." There are few activities of organized society that do not have some bearing upon the health and welfare of a community, and it is easy for the historian of public health to wander far afield from those matters of direct concern. The clusive phrase, health-related, can lead him into investigating such diverse subjects as the history of tenements, immigration, urbanization, and of poverty itself.

Long before health boards and formal governmental agencies came into existence, responsible citizens and governmental officials recognized that certain conditions were detrimental to the welfare of the community, and they sought to eliminate, modify, or control them. Some of these community efforts were a direct response to specific health problems. The isolation of lepers is a prime example. Fearful that the disease was spread by contact, medieval society literally read lepers out of existence. By religious authority, they were formally banished from society and condemned to exist in a world apart. An even better example is the emergence of quarantine during the fourteenth century. The spread of bubonic plague through Europe left little doubt that the disease was communicated from one individual to another by some mysterious means. While doctors could do little to effect a cure, it was possible to prevent the infection from gaining a foothold by quarantining or isolating infected areas.

Many health measures reflected prevailing medical concepts. The relationship between malaria and swampy low-lying areas was noted in earliest times and led to the miasmic or pythogenic theory, the belief that the disease was caused by an invisible noxious gas emanating from putrefying organic material. As towns

developed and the poor were crowded into filthy hovels and fetid slums, it soon became apparent that these were the individuals who bore the brunt of the endemic and epidemic sicknesses. The foul odors of the recking slums gave what seemed conclusive proof to the miasmic theory. The great sanitary movement of the nineteenth century which laid the basis for modern public health administrative systems was predicated in large part upon this thesis. Cleanse the slums, ventilate the tenements, and sickness will disappear was the cry of the reformers. The theoretical justification may not have been valid, but sanitary reform did work. Historically, a pragmatic approach based upon workability has been responsible for a major part of progress in medicine and public health; it was not until the end of the nineteenth century that scientific methodology was applied in full measure to the field of medicine.

Other public health laws arose from a concern for the welfare of the people. The close regulation of the processing and sale of bread and flour, which extended down to the end of the eighteenth century, is a clear illustration of this type of governmental action. The bread assizes of New York and other American colonies originated in Western Europe. Here several factors had contributed to their development: the tradition of the feudal lord's responsibility for his serfs, the teachings of the church with respect to the poor, and the emergence of the economic theory of mercantilism. According to this latter doctrine, the size of a country's population was one determinant of its wealth; hence it behooved the state to look to the welfare of its citizens.

For nearly all of recorded history—and for much of mankind today—bread literally was the staff of life. Since flour could easily be adulterated, even before the day of chemical additives, millers and bakers were always subjected to close scrutiny. Moreover, since food shortages and famine conditions were perennial threats, bread prices, unless closely supervised, could often soar beyond the reach of the poor. Consequently, the bread assizes not only determined the quality of flour and bread but also set their price.

In the colonial period, the public health historian necessarily deals with a wide range of subjects. Regulations on the sale of meat and fish, ordinances designed to eliminate or prevent public nuisances, sanitary codes for street cleaning, appropriations for digging and maintaining public wells, and a variety of other activities properly fall within his sphere. The patterns devised to meet some of these early difficulties laid the basis for sound legislation at later dates. In other instances, ordinances and regulations were established which lasted long beyond their usefulness. In the latter half of the nineteenth century, as municipal government developed and many sanitary problems became purely administrative matters under separate administrative subdivisions, the focus of public health history narrows and concentrates upon those areas of immediate concern to the Health Department.

While no formal health agencies, other than an occasional temporary board of health, were established in the colonial period, the provincial legislatures and municipal councils assumed responsibility for the health of the community. But, as indicated earlier, health needs and health concepts vary from period to period and from community to community. Changes in society automatically solve many problems: the presence of hog pens in densely populated areas, for example, was both a public nuisance and a hazard to health. While modern authorities might be more concerned with the danger from flies than from effluvia, they would have sympathized with the efforts to ban hog pens from colonial New York. They would also have fought against the loose hogs that served as scavengers for a good part of New York's history. Aside from being a nuisance and an occasional danger, the hogs, by eating garbage, provided an excuse for not establishing an effective garbage removal system.

Even in the one hundred years since the New York Metropolitan Board of Health was first created, the nature of its work has altered drastically. Advances in processing and transportation now make it possible to have fresh milk without the immediate presence of cows. No longer is it necessary to police cow stables or worry about manure piles in the center of municipalities. The elimination of these manure piles, however, is by no means a net gain, for the automobile has brought with it a new set of health problems. Responding to the needs of their communities, in the 1860s health departments took upon themselves the duty of inspecting kerosene or illuminating gas. The crude methods of distillation meant that the buyers of kerosene often found themselves with a lamp full of gasoline, a discovery that often was not made

until the lantern was lighted. The frequency with which kerosene lamps exploded created a hazard to health and brought them to the attention of the health authorities. Here, too, with improved processing and better marketing, the danger soon passed.

The case of illuminating gas illustrates still another aspect of public health measures. Once a health problem is solved, whether by direct action of the authorities or by social or technological changes, its policing or administration is often relegated to some other agency. Street cleaning was a major preoccupation of sanitary reformers. Eventually an effective system was devised, a separate administrative agency created, and it was no longer of immediate concern to the Board of Health. Supplying the public with ample quantities of safe drinking water was another major aim of early health officials. With the technical and engineering problems solved, this responsibility, too, has been delegated to a separate administrative agency.

The twentieth century brought with it a profound revolution in public health. The great discoveries in bacteriology had made it possible to eliminate or control the great epidemic diseases. Regulation of water and milk supplies, control of food processing and marketing, and other health responsibilities gradually became a matter of routine. Meanwhile, effective programs of health education combined with an ever higher standard of living created strong support for the extension of public health services. The climination of certain major communicable diseases and the drastic reduction of others, rather than reducing the field of public health, revealed new frontiers for health pioneers. Venereal disease, cancer, degenerative disorders, and mental illnesses all present serious obstacles to the goal of achieving sound community health. In addition, technological changes have seriously polluted both air and water. The application of atomic discoveries to peaceful uses has opened up an entirely new area for health specialists. Health departments have had to become research-minded, if only to keep abreast of technological changes. Moreover, the findings of social scientists are providing health officials with new methods of evaluating existing procedures and for devising new ones,

The field of public health today finds itself in a state of flux as never before—a statement which the zealous sanitary reformers of the mid-nineteenth century and the laboratory enthusiasts of the late nineteenth century might well question. But the problems are greater, if only by sheer weight of numbers. The expansion of urban agglomerations such as New York necessitates a vast governmental bureaucracy. Every health problem intensifies in direct, if not geometrical, ratio to population density. The survival of the health departments, and of our urban civilization itself, depends upon the ability of health administrators, scientists, and engineers to cope with existing difficulties, to recognize the emergence of new health problems, and to anticipate future ones. The second volume of this study will be a far cry from volume one, yet there are recurrent themes common to both. Declarations made by health pioneers of one or two hundred years ago often have a familiar ring. The fight against inertia, apathy, and vested interests is one that health-minded citizens have fought throughout recorded history. The successes and failures of their predecessors should serve both to encourage and to console the present dedicated band of public health leaders.

Part I. From Frontier Post to Settled Community

1

A Sweet and Wholesome Climate

To the English and Dutch, who viewed the New World from the standpoint of their well-tilled and comfortable homelands, the American scene was both strange and wonderful. It was a place of beauty and luxuriant fertility, and yet, at the same time, a land of savage inhabitants and forbidding wilderness. Game of all types abounded and the streams and coastal waters provided enormous quantities of fish, oysters, and clams. But special skills were needed to gather these harvests, and the early settlers often found themselves starving in the midst of plenty. The Indians, who could—and often did—help the colonists, were soon alienated by the white man's contempt for those whom they considered heathen savages and by the avariciousness of traders. Periodically, when open warfare developed, the whites scarcely dared leave their settlements to harvest nuts, fruits, and berries or to add to their limited diet through hunting and fishing.

The abundance of game in summer and fall, however, never provided adequate food for the year round, even for the Indians, who, contrary to popular view, had come a long way from a purely gathering or hunting and fishing stage. The Fastern Indians had well-developed societies and drew a good portion of their food supplies from agriculture. Although tribal boundaries were fairly distinct, pressures of one sort or another frequently caused them to shift. At the time of the settlement of New York, the Hudson Valley was occupied by tribes of the Algonquian family, but they were under pressure from the expanding Iroquois federation to the north and west.

While the Hudson Valley remained unknown to Europeans until the coming of Henry Hudson in 1609, British, French, and Dutch fishermen and traders had been visiting the North American coast for a hundred years prior to this event. Thus the Indians had been encountering European weapons and tools—as well as European diseases—long before the Dutch occupied New York. The introduction of Western guns and other trade articles had had a sharp impact upon the Indian cultures, but it was minor compared to the drastic effect of permanent white settlements. The expansion of the European colonies caused shock waves which reached far into the interior. Fortunately for Europeans, age-old tribal hostilities prevented the Indians from unifying and sweeping them from the Continent, and as European footholds in America expanded, successive tribes found themselves caught between the colonists on one side and their traditional enemies on the other.

No aspect of Indian-White relations is so tragic as the devastating effect of European diseases upon the American natives, Completely isolated from the Euro-Asian land mass, the American Indian apparently escaped all of the great epidemic diseases. With the possible exception of syphilis (and even this exception is debatable), not a single one of the major killer diseases existed among them prior to the coming of the whites. European observers who visited the tribes in their pristine state were universally struck by the straight, well-formed, robust physiques of the Indians. They described the Red Men as free of all diseases, and mistakenly attributed to them an understanding of the laws of physic. Since the Indians were healthy, it necessarily followed that they knew the secrets of nature and had learned to avoid or to cure sickness. Like all primitive societies, the Indians relied largely upon herbs in their "medicine-making," and this fact, coupled with the profusion of botanicals to be found in the New World, was convincing proof to Westerners of Indian medical lore.1

The early Dutch settlers had minimal problems with the Indians. The Dutch West India Company was primarily concerned with the lucrative fur trade, and for the first few years the Dutch settlements were largely trading posts. Even so, needless abuse of individual Indians led to increasing bitterness which finally culminated in a major Indian war in the early 1640s and another Indian crisis in 1655. By the end of the seventeenth century, Manhattan Island and Long Island were securely under white control, and although the Indian problem was to trouble the province of

New York for many years to come, New Amsterdam or New York was too far removed from the frontier to feel the direct effect of these difficulties.

Unlike Jamestown and Plymouth settlers, the Dutch did not face a "starving time." Pioneering work by the two earlier colonies had demonstrated the type of manpower and supplies necessary for a successful settlement. Moreover, the Dutch West India Company, through its successful depredations upon the Spanish treasure fleets, was financially able to support the colony in the crucial beginning years. Nonetheless, as with all such ventures, the colony's founders had no easy time. It always took several years to clear land and establish a sound agricultural base. Meanwhile, the pioneers existed largely upon dried and salted food brought from Europe, augmenting their diet by hunting and fishing. For example, the Reverend Jonas Michaelius reported in August of 1628 that food was scarce and poor and that little fresh milk or butter was available.

Peter Minuit, like the commanders of all early colonies, was confronted with several pressing demands upon his limited labor supply: temporary housing had to be provided immediately to enable the colony to survive the onset of winter; the danger from Indians on land and the Spanish and other enemies from the sea made imperative the building of fortifications; and at the same time ground had to be cleared and prepared for seeding. To complicate matters, the Dutch artisans and farmers who were needed to build a stable social and economic base in New Netherland were reluctant to leave their prosperous homeland. In the same letter in which he deplored the food shortages, Michaelius wrote in 1628 that the colonists were "beginning to build new houses in place of the hovels and holes in which they huddled rather than dwelt." Ten years later another new arrival declared that the houses were so wretchedly constructed that "the wind blows through them everywhere."2

By the late 1630s new recruits from many areas began coming to New Amsterdam. Eight English settlers took an oath of loyalty in 1639, the forerunners of many more to come, and Father Isaac Jogues, a Jesuit missionary, reported four years later that the town had between four and five hundred men "of different sects & nations." As New Amsterdam and the surrounding settle-

ments struggled along in the early years, their problems were compounded by a series of incidents with the Indians, culminating in a major war from 1641–1645. The long period of hostilities caused heavy casualties and high property losses on both sides, but it virtually ended the Indian threat to the town of New Amsterdam. Thanks to an influx of new settlers, the small community quickly recuperated from its losses, and by 1650 its population was estimated at about 1,000. By this date permanent buildings had replaced the temporary structures, and New Amsterdam was a prosperous and pleasant little place.

With a population of scarcely 1,000, New Amsterdam had as vet no serious sanitary problem. Much of the soil was sandy and porous and the rivers on each side of the settlement provided a seemingly unlimited dumping ground for sewage and garbage. The climate was healthful and the wide variety of shrubs and trees provided an almost idyllic setting for the little town. In 1649 a Dutch observer wrote that the climate was pleasant and more temperate than in the Netherlands. While the northwest wind occasionally blew rather sharply, he declared, it was salutary, "for, being very bracing and pure, it drives all damps and superfluous moisture far from the land. . . . " The coast, he added, was clean and sandy.4 Five years later another Dutch colonist commented that although there was neither a doctor nor an apothecary, the country was "good and healthful" and the people seldom sick. In 1670 Daniel Denton visited New York and described its beauties in glowing terms. The brick and stone buildings roofed with red and black tile, he commented, gave it "a pleasing aspect," while the climate was ideal—"seasonable showers, . . . a sweet and pleasant air, and . . . such Influences as tend to the Health both of Man and Beast." It was a place, he continued, where many people had known no sickness for twenty years, and where a mortality of two or three per year was considered great.6

Thirty years later another traveler, Charles Wolley, depicted the city in comparable terms. He, too, found the climate sweet and wholesome and free from all insalubrious influences. Gentle breezes constantly fan the town, he wrote, and "it does not welcome its Guests and Strangers with the seasoning distempers of Fevers and Fluxes, like *Virginia*, *Maryland*, and other Plantations. . . ." Although of a weakly nature and lacking in stamina, he

had never once been sick during his three years' residence.⁷ A word of caution should be given here. In the seventeenth and eighteenth centuries the New World was rightly looked upon as an exotic and marvelous place, and travel writers who wished to keep their readers dared not disturb this image. Moreover, many works were written under the patronage of wealthy land grant holders who were eager to people their vast holdings in America.

Over sixty years ago two able sanitary engineers, writing of old wells and watercourses on Manhattan Island, quoted a British chaplain's description of Manhattan as an idyllic place, having no stagnant waters or low shores. The two authors pointed out that the average citizen in New York in those years could see little elevated ground and that marshy inlets, salt water marshes, and large areas of swamp abounded. They cynically wondered if the chaplain had land to sell in Beekman's swamp!8

Yet this judgment is too harsh. Low and marshy land was characteristic of the shores, but salt water marshes did not provide a breeding ground for the omnipresent anopheles which made malaria the scourge of much of Europe and the American colonies. Nor were the swamps and streams polluted by countless generations of men eking out a bare living from the land. When Adriaen van der Donck spoke in 1649 of the waterfalls, streams, rivulets, and brooks in New Netherland, he declared that all, except for those which were brackish or salt, provided good drinking water for men and animals. The innumerable fountains and springs which burst forth in the most unexpected places were all "very clear and pure. . . . " Compared to the crowded cities and towns of Europe, literally built upon the middens and rubbish heaps of centuries of generations, the small settlements nestled on the edge of vast forests must, indeed, have had a unique freshness and charm.

Although sanitation was no problem in the early days, medical care of some sort was essential. By 1628 the population of Manhattan had grown to 270 and included a number of families. While no physicians or surgeons had accompanied the first large group of settlers in 1626, Peter Minuit had brought two zieckentroosters, or visitors of the sick. Holland in the seventeenth century was becoming one of the leading medical centers, and by the early eightcenth century was to draw medical students from all over Europe.

Since the number of university trained physicians was always inadequate, a good share of medical practice had been taken over by the *krankenbezoekers* and *zieckentroosters*. The former, literally "seekers of the sick," visited those who had suddenly taken ill, while the latter were more concerned with comforting those who were seriously ill or dying. Spiritual consolation was an aim of both groups, but inevitably their members had acquired considerable facility in nursing and medical care.

In Christianity, as in many other religions, physical and spiritual therapy frequently went hand in hand. The monasteries of Europe not only helped to preserve the medical lore of ancient days, but religious orders established the first hospices and other institutions for the sick and poor. In the seventeenth century medicine was a learned profession taught largely on a theoretical basis—the phrase "to read medicine" was used well into the twentieth century. Usually ministers, the best-educated men in the community, were expected to administer to the physical as well as the spiritual needs of their flocks. Thus, as Dr. James J. Walsh points out in his medical history of New York, the arrival of the Reverend Jonas Michaelius marked a step forward in the way of medical assistance.¹⁰

Another form of medical care came from ship surgeons, some of whom settled in the colony. These men were empiries who combined barbering, bloodletting, and rudimentary surgery. Their knowledge was often acquired rather casually but more frequently through a brief apprenticeship. Lancing boils, setting fractures, and dressing wounds were their major functions, although the better surgeons had a good knowledge of anatomy and could perform fairly complicated operations. Surgery was only slowly coming into its own in these years, and its practitioners were still considered to be rude craftsmen. Ship surgeons generally represented the lowest element among their craft; the pay was low and working conditions deplorable. However, many capable and adventurous young men gained their start in this capacity, and those who decided to remain in the colonies frequently made significant contributions.

With manpower the prime need in opening up new colonies, the Dutch West India Company wasted little time in adding midwives to the rolls of the Company employees. The first of these probably arrived around 1630. Possibly as an inducement to remain in the colony, in 1633 a small house was built for one of the midwives. The recipient of this benefit, Tryntgen Jonas, subsequently petitioned the officials in Amsterdam for an increase in wages and other perquisites. In the correspondence she was referred to as a "midwife of New Netherland." A welcome addition to the colony came in 1637 when Dr. Johannes La Montagne, a Huguenot refugee who had received his education at the University of Leyden, landed in New Amsterdam. La Montagne, the first physician with a formal medical degree, was an able and competent individual. His medical skill and other qualities soon brought him to the attention of the Governor and eventually led him to a seat on the Council.

Beginning in 1631, the first of the ship surgeons began settling in New Amsterdam. Generally these young men were welcomed, but, as the colony grew and the number of barber-surgeons increased, they began to resent competition from visiting ship surgeons, who often practiced their trade while in port. In a significant commentary upon the state of surgery, the chirurgeons, as they were called, petitioned the Director-General and Council to grant them an exclusive right to treat wounds and to shave all persons within the town. The Council acceded to their demand, with the exception that any individual could shave himself or his friends provided he did not charge a fee. In what may have been the first attempt to regulate medical practice, the Council also ordered that "Ship-Barbers" were not to practice medicine on shore without the consent of the petitioners "or at least of Doctor La Montagne."12 Whether the reference to Dr. La Montagne merely showed his ranking position in the medical hierarchy or whether it was an effort to ensure that only competent surgeons were permitted to practice is difficult to say.

The Durch West India Company might recognize its responsibility to provide housing and certain governmental buildings, but beyond that it was reluctant to go. In 1649 a number of leading citizens remonstrated with the Board in Amsterdam about the failure of the Company to make provision for the sick and the poor: "There is occasionally a flying report of a hospital and of asylums for orphans and for old men, but as yet not a sign of an attempt, order or regulation has been made. . . ." In reply, the secretary of the Board raised a question as to whether or not it was

the responsibility of the Company to build hospitals and schools.¹³ While the petition was not rejected outright, nothing came of it for several years. In the meantime, sick soldiers and others continued to be billeted in private homes. Finally, in 1658, upon the urging of Surgeon Hendricksen Varrevanger, a small hospital was established with Hilletje Wilburch as matron.¹⁴ Unlike the French, whose early colonies were military outposts complete with surgeons, hospitals, and midwives, the English and Dutch colonies developed much more haphazardly and it may be that this small institution was the first of its kind in the thirteen original colonies. The French in Quebec, however, antedated the English and the Dutch in establishing hospitals, and it is possible that the Spanish in Florida were well ahead of all three in this respect.

Over and above provision for medical care, the only governmental action during the first few years which might possibly have had a public health implication was an ordinance passed in the spring of 1638 aimed at immoderate drinking. No one was permitted to sell wine except at the storchouse of the West India Company. Although the phrase "immoderate drinking" was used, one suspects that economics may have had something to do with the ordinance and that it was designed to preserve the Company's monopoly. In this same year the Director-General and Council issued another decree providing for an inspection and grading of all tobacco exported from New Netherland.15 This form of governmental paternalism was consistent with the mercantile doctrine. Exports were considered the lifeblood of a country and guaranteeing good quality merchandise was sound business. For the next two hundred years the inspection of flour, grains, and meat was provided for in a series of laws, but the intent was purely economic and had no bearing upon the welfare and health of local citizens.

Much more to the point was a measure in 1644 directed at keeping the Fort clean. After noting that the soldiers and other residents had been guilty of depositing filth and ashes in the Fort, the Council ordered that henceforth all such matter was to be conveyed outside and "that no one shall make water within the Fort. . ." Anyone caught in this latter act was to be fined three stivers for each offense. In 1648 a law was passed prohibiting hogs and goats from running in the streets. This ordinance was

only the first of what was to be a series of similar laws extending well into the nineteenth century. The rural tradition of living with domestic animals is almost as old as man, and hogs, which freely roamed the city streets, were accepted both as scavengers and as a cheap source of food for the poor. Only in the past one hundred years has this custom, along with that of keeping cattle within the city limits, gradually disappeared. Indeed, a vestigial remnant of man's dependence upon domestic animals still remains in the widespread assumption, even in this age of sanitation and cleanliness, that dogs and other pets in the most crowded city areas should freely defecate in the public gutters.

This first animal regulation in New Amsterdam came as a result of damage to gardens and orchards. The ordinance, which decreed that domestic animals were to be kept in fenced enclosures, was no more successful than the hundreds of other legal measures which were to follow. In June of 1650 Governor Stuyvesant, indignantly complaining of the damage done to the Fort by loose hogs, goats, and sheep, again ordered that all animals be penned.¹⁷ Some eighteen months later he was reiterating this same complaint. Although he had made considerable progress in improving the Fort, he declared, the newly erected works had been "destroyed and trampled down by horses, cows, and hogs." After criticizing the town officials for not enforcing the ordinances, he ordered the soldiers to shoot all hogs found around the fortifications. Subsequently the city officials requested him to withdraw the order and to have a fence placed around the fort. Stuyvesant agreed, provided the community would pay for the enclosure.18

This minor skirmish did not end the fight between the Governor and the citizens, for apparently the fence was never built. Almost every year Stuyvesant indignantly demanded some sort of action—and almost every year the Council responded by repassing the same ordinance. In 1656 the soldiers were again ordered to shoot hogs found at large, but this order, too, was not enforced. Two years later, because of damage to streets and roads caused by rooting hogs, the city officials ruled that all owners were to put rings on the noses of their hogs, an order which in effect gave tacit permission to the owners to let their animals roam at large, ¹⁹

Interestingly, none of the early ordinances criticized the use of hogs as scavengers or opposed loose hogs on grounds of health. Even an objection to their rooting in the Old Graveyard in 1656 was probably motivated by considerations of property damage or fear of desecration. In future years hogs were literally to root out bodies from shallow graves in many cities, although this does not seem to have been the case in 1656.

Along with hogs, packs of stray dogs were another perennial complaint and the subject of literally hundreds of ordinances throughout the history of New York and other cities. While the danger from rabies was the usual stimulant to municipal action, the disease apparently had not gained a foothold in the Dutch period. When Schout (Sheriff) Nicasius de Sille in 1660 requested regulations on this score, he stated that he wanted protection from vicious dogs while making his nightly rounds.²⁰

Although fire protection does not fall under the purview of the health authorities today, in earlier times it was a significant cause of death and injury and a major reason for the loss of property. Open fires, wooden buildings, and thatch or shingle roofs were a dangerous combination. With only well water and buckets to fight fire, it was exceedingly difficult to prevent the flames from spreading. Hence fire regulations were always one of the earliest forms of municipal regulation. In 1648 Stuyvesant and the Council noted that most houses were built of wood, roofed with reed, and many had wooden chimneys. Failure to sweep wooden chimneys, the preamble continued, had already caused the loss of two houses, and greater damage was feared. The ensuing ordinance stated that henceforth no chimney could be built of wood "or plaister" in any house situated between the Fort and Fresh Water, an area marking the main limits of the town. Existing wooden chimneys could remain temporarily but the fire wardens were to inspect them regularly and levy a fine of three guilders for every flue found to be dirty. The owner of any house burned through negligence was to be subjected to a fine of 25 florins—a fairly substantial sum.21

It was always easier to pass laws than to enforce them, and in 1656 a similar ordinance was reenacted prohibiting the use of straw or reed for roofing material and of wood for chimneys. The next year an even more stringent law ordered the removal from the city of all thatched roofs, wooden chimneys, hay-ricks, and haystacks, and laid a tax upon the citizens to provide fire buckets,

ladders, and hooks at street corners.²² Like the hog laws, fire regulations were to remain a source of complaint for the citizens and of exasperation for city officials.

As already noted, in this day and age of a widely varied diet in which bread is purely incidental to the meal, it is difficult to appreciate the significance of bread in former years. Almost as soon as specialization of labor developed the baking of bread was strictly regulated. The colonization of America came at a time when these regulations were still rigidly enforced in Europe, and the principle was quickly applied in the colonies. The year 1649 was one of bad weather, poor crops, and food shortages, and when the price of flour was high, bakers were often tempted to adulterate it or reduce their costs by other means. In response to complaints in this year, the Governor and Council decreed that "in order that neither the good Inhabitants nor the Natives be herein incommoded by over and short weight," bakers were to make their bread from pure wheat or rye flour. The loaves were to be baked in three standard sizes, two, four, and eight pounds, and the price was to be determined by the cost of flour.23

The following spring, possibly reflecting an even greater shortage of flour, the Council decreed that the bakers were free to make white loaves but not "Cakes nor Cracknels." The bakers were again warned to use only pure flour and to see that the loaves conformed to the standard weight "so that the Commonalty may be protected against complaints concerning the poorness and small size of the common loaf."

In 1656 another ordinance established a standard weight and price for loaves and required the baking of bread at least once or twice per week. Any loaves found to be under weight or selling above the standard price were to be forfeited. To help enforce the baking regulations, the Council ordered that henceforth bakers, like tavern-keepers, were to secure a license. While the townspeople supported the bread regulations, they grumbled about licensing bakers on the grounds that once the custom of licensing was introduced, it might well extend to other crafts and trades.²⁵

Despite some opposition, the new regulations seem to have worked quite well. However, in the summer of 1661 a series of complaints led the councilmen once more to investigate the bread situation. The consulting baker, Hendrick Willemsen, declared that the main fault lay with those bakers who left the preparation of dough in the hands of their apprentices. Subsequently in October, the Council nominated Willemsen and Cristoffel Hooghlant as "overseers" or inspectors of bread. New regulations were established and the inspectors were empowered to seize all bread which did not meet specifications. On this same date, October 21, the Council prohibited the bakers from making sweet cakes under penalty of 50 guilders. The year 1661 was one of alternate drought and heavy rains, and it is safe to assume that food shortages precipitated the demand for municipal action.²⁶

Complaints were renewed in 1662 and the Court ordered the schout and bread inspectors to avoid a set schedule in their weekly visits to the bakeries in order that they might more easily discover the guilty bakers.²⁷ When it became apparent that these measures were inadequate, the Court broadened the powers of the bread inspectors and subjected offending bakers both to the loss of illegal bread and to financial penalties. By the end of the Dutch period, the government had established strict regulations with respect to the quality and price of bread and had provided an effective system of inspection and enforcement. The bakers might complain, but no one questioned the right of the governing authorities to intervene in matters which concerned the welfare of the citizens.

Closely related to price control of bread was the whole question of weights and measures. In 1653 the burgomasters and schepens of New Amsterdam appealed to the Governor and Council for a public weighhouse, and one was erected the following spring. Four years later another ordinance called for the appointment of an inspector of weights and measures and decreed that all persons using weights and measures in their businesses were to have them approved by this officer. As an interesting sidelight, with the expansion of the town the weighhouse, the storehouse, and other agencies gradually hired more employees, and what may have been the city's first municipally sponsored mutual benefit association came into existence. In 1662, upon the request of the foreman of the porters of the weighhouse, the burgomasters ordered the porters to pay eight stivers each week into a common fund to be used in case of sickness or death. Significantly a com-

pulsory feature was included, since those porters refusing to make a voluntary contribution were to be assessed "twice as much!" 28

The next step to protect the city's food supply came with the establishment of a meat market. On October 30, 1656, Governor Stuyvesant and his Council ordered that the right to slaughter animals be sold at a public auction. A few days later the successful bidder for the position of city slaughterer petitioned to have some "sworn butchers" assigned to help him. In granting the petition, the Council appointed three official butchers and at the same time drew up a detailed set of fees for their services. A week later the monopoly of the city slaughterer was officially confirmed when an ordinance prohibited anyone from slaughtering without his permission.²⁹ About this same time a small public market was built, but the records are not clear as to its exact nature. In any case, in January of 1650 the burgomasters resolved to establish a market for lean and fat cattle and subsequently the market, complete with a tile roof, was opened under the charge of one Andries de Haas. a baker.³⁰ Having established some control over public food supplies, it is not surprising that a proposal for a public well came during these years. Two burgomasters resolved to consult Governor Stuyvesant on this matter in July of 1658, but there is no evidence that the project was undertaken.31

It was stated earlier that by 1650 New Amsterdam had become an attractive town. Traditionally the Dutch have been noted for their neatness, orderliness, and cleanliness, and these qualities struck observers of New York long after the city had fallen into English hands. At the time of Stuyvesant's arrival in New Amsterdam in 1647, houses and buildings had been erected more or less haphazardly, with little attention paid to boundary lines; the result was that houses straggled along crooked streets. Determined that the town should grow in a more orderly fashion, the Governor and Council appointed official surveyors and empowered them to regulate street lines, prevent the erection of unsightly buildings, and generally supervise the streets. Their duties also included keeping fences in line and preventing pigsties and henhouses from becoming nuisances.32 Residents living on the waterfront or on the border of the canal were expected to shore up the banks with piling and planks.

When Governor Stuyvesant and the Council permitted New Amsterdam to establish a municipal government in 1653, the City Court took over the responsibility of enforcing and strengthening the building regulations. In November of 1654 the Court, on the complaint of Sibout Claessen, ordered his neighbors to shore up their land along the East River. Three months later one Jacob Steendam was summoned before the City Court for having built his house without consulting the fence viewers or the city surveyors. More specifically, he was charged with failing to keep his residence in line with the other houses.³³

Late in November of 1655 the city officials wrote to the Governor and Council that a group of refugees (possibly Swedes from Delaware), wishing to settle in the city, had requested building lots. The burgomasters asked permission to make a complete survey of the town to determine what lots were available and to estimate their value. The request was granted, and the survey was presented to the City Council in February of 1656. It showed that the existing building regulations had been generally disregarded and that the town was simply growing like Topsy. Taking note of the negligence with respect to the building laws, "whereby a great deal of bad building had been done not only to the disadvantage of the public but also to the disreputation of the City," the burgomasters or councilmen emphasized that no building was to be permitted without the approval of the city surveyors and decreed a heavy fine for noncompliance.³⁴

Since part of the land which formed the original settlement was low and marshy, it was only natural that the Dutch, old hands at dealing with marshy terrain, should first dig drainage ditches and later turn them into canals. As early as the 1640s a narrow stream draining the marshy area which eventually became Broad Street was widened and deepened. In the later 1650s it was decided to deepen the canal further and to plank up the sides, thus providing both drainage and dockage facilities. The reconstruction of the canal, or Heeregraft as it was called, was one result of the survey of 1655–1656. A neat, clean canal with firmly shored banks was more usable and at the same time more consistent with the Dutch conception of a well-run city. In a similar fashion, the survey led the City Court to order all residents living along the East River

to conform with the law requiring them to shore up the banks with planking.

Some enforcement of building regulations following the survey of 1655–1656 seems to have reduced complaints during the remaining years of the Dutch period. A minor problem arose in 1661 with respect to the streets, but the precise difficulty is not clear. In September of that year the burgomasters informed Pieter Tonneman, the city schout, that at the end of their session they intended to inspect the streets to determine "whether anything lies there to prevent driving." If any obstructions were found, the owners were to be ordered to remove them or else the city would do so at the owner's expense. In the summer of 1664 two citizens complained to the City Court that a tannery had been erected between their homes, thus spoiling their water and causing a "great stench." The city officials ruled that since tanneries had been permitted to operate near other residences, no action could be taken in this case.³⁵

By the mid-1650s New Amsterdam had been in existence for thirty years and the population had climbed well above 1,000. As it had grown, unsanitary practices which were of little significance in a tiny settlement had gradually assumed more importance. Moreover, the influx of English and other settlers had altered the complexion of the population. The first indication of this changing situation was an ordinance in February of 1657 prohibiting citizens from throwing rubbish, filth, dead animals, and other refuse into the streets or the canal. The law specified four sites to which all garbage and rubbish was to be taken. Anyone guilty of dumping refuse in the streets or canal was to be fined three florins for the first offense, six for the second, and assigned an arbitrary punishment for the third. In addition, the inhabitants were ordered to keep the streets clean in front of their houses or lots under threat of similar penalties.³⁶

It was during 1657, too, that the general reconstruction of the Hecregraft was started. Despite legal prohibition, the canal proved too inviting a target for those reluctant to cart their dead animals and other refuse to the assigned garbage dumps. The laborers engaged in deepening the canal found themselves waging a constant battle with lazy residents who looked upon it as a convenient

sewer. After struggling with the question several months, the City Court specifically forbade throwing anything into the canal and decreed an unusually heavy penalty of 25 florins.³⁷ Firm action at this time solved the problem, but the solution could only be temporary; street sanitation, like that of docks and slips (the water space between piers), was to remain a permanent source of irritation.

By 1658 an even more pressing nuisance had become evident. In May the city officials ordered the removal of all privies having their outlet level with the ground. The occasion for this ruling was given more explicitly in the preamble to an ordinance proclaimed three months later:

"WHEREAS many, even the greatest part of the burghers and inhabitants of this City build their privies even with the ground with an opening towards the street, so that hogs may consume the filth and wallow in it, which not only creates a great stench and therefore great inconvenience to the passers-by, but also makes the streets foul and unfit for use,—therefore . . . the Burgomasters and Schepens herewith order and command, that all and everybody . . . shall break down and remove such privies coming out upon the street." ³³⁸

Owners were given eight days to remove offending privies, but whatever success was achieved in 1658, the problem soon returned. For example, three years later Schout Tonneman was again instructed by the burgomasters to see that all privies emptying into the street were removed.³⁹ Overflowing privies, however, became a perennial problem, and an adequate solution was not possible until effective sewage and water systems were built in the late nineteenth and early twentieth centuries.

Unlike their English counterparts, the Dutch in New Amsterdam did not keep detailed population statistics. All authorities agree, however, that the number of inhabitants grew from a little over 200 in 1626 to about 1,000 by 1650. Exactly how much of the growth was due to immigration and how much to a natural increase is difficult to say. While the Dutch did not suffer heavy losses from sickness and statistion in the first few years, Indian depredations were serious in the 1640s. Malaria, one of the key

colonial disorders, evidently was no problem, but it seems logical that smallpox, measles, and the so-called fluxes must have taken some toll among the early settlers. Here again little is known of their ailments, although most observers seemed to feel that the colony was generally healthy.

In 1649 Governor Stuvvesant called for a day of fasting and prayer, listing sickness as one of the reasons. Smallpox and "Chin cough" (probably whooping cough) were ravaging Massachusetts at this time and cases may have spread to New Amsterdam. Isaac Stokes, in his monumental study of New York history, mentions a general epidemic in the summer of 1655, the year that the Indians went on their last rampage. The next reference to epidemic disease came in 1658 when an outbreak of "hot sickness" swept through the town. No statistics are available as to the seriousness of the attack, but the city records state that two additional members were elected to the court of orphan-masters because the epidemic had greatly increased the number of estates to be handled.40 The last wave of sickness during the Dutch period occurred in 1661. Here, too, the evidence is scant, but in proclaiming January 26, 1662, as a day of fasting and prayer, Governor Stuyvesant mentioned a pestilence as one of the reasons.41 For the Dutch period as a whole, the absence of graphic and harrowing accounts of pestilence which so often characterize early American records is a good indication that the colony was as healthy as many observers claimed.

When the year 1664 brought a close to the Dutch political control of New Amsterdam, the city had, for its day, a well-organized and relatively effective government. The production of bread, the chief food item, was strictly regulated, a tentative building code had been created, laws relating to certain basic aspects of sanitation were on the books, and efforts had been made to prevent hogs and other animals from roaming the streets. Special inspectors had been appointed to enforce the regulations with respect to bread, construction, and the condition of the streets, and the burgomasters and schepens usually supported lesser officers in enforcing the laws. For example, when Schout Tonneman reported in 1664 that several dead hogs were creating a stench in the streets and asked for instructions, he was authorized to use the city's Negroes to have them removed and buried.⁴² The Dutch penchant

for cleanliness was reflected in New Amsterdam and must certainly have contributed to the general salubrity. Thus when Charles II of England launched the second war against Holland by seizing New Amsterdam, England took over a pleasant, thriving, and healthy community.

Notes to Chapter 1

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- 27. Stokes, Iconography, IV, 221-23; Records of New Amsterdam, IV, 214-
- 28. Stokes, Iconography, IV, 137, 186, 190, 222.
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- 34. Ibid., 170-71; Records of New Amsterdam, I, 23.
- 35. Stokes, Iconography, IV, 214; Records of New Amsterdam, V, 87.
- 36. Records of New Amsterdam, I, 31.
- 37. Ibid., 33.
- 38. Ibid., 38, VII, 187.
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The Transition Years, 1664 to 1720

During the first forty years of its existence, the settlement of New Amsterdam had gradually made the transition from a fortified trading post into a relatively prosperous town. Dutch tolerance and the reluctance of the Hollanders to migrate had led to an influx of many nationalities, and New Amsterdam soon became the most cosmopolitan colonial town in the seventeenth century. Following the bloodless takeover in 1664, the large number of English inhabitants facilitated the change from Dutch to British administration. The process was further eased by the tact of Colonel Richard Nicolls, the first English governor.

The incorporation of New York into the British American colonial system undoubtedly helped the port city. Certainly the town grew rapidly, increasing from about 1,000 in the mid-1650s to between 4,000 and 5,000 in the 1690s. These figures are only estimates, since neither the church nor lay records are of much value. One of the colonials bewailed in 1678 that the shortage of ministers and multiplicity of religious sects meant that no records were kept of births, christenings, marriages, and deaths. Whatever its deficiencies, in comparison with other seventeenth-century towns, New York was clean and orderly. A traveler in 1672 declared that it contained about five hundred well-built homes. Just after the turn of the century another visitor stated that the buildings were usually of brick, "very stately and high," and that the "inside of them are neat to admiration...."

Paradoxically the growth of the city came despite the fact that politically the first forty years of English control were tumultuous ones. In 1673 the Dutch, in the course of the final Anglo-Dutch War, recaptured New York, but were forced to return it shortly afterward. Although the English governors, at least in the

early years, were honest and capable, the 1680s saw the colonists fighting for more home rule, specifically demanding a general assembly for the colony and a more liberal charter for the City of New York. To complicate matters, the upheavals in England, which culminated in the Glorious Revolution of 1688, placed New York and the other colonies in a difficult position. New York endured its own time of troubles from 1689 to 1691, when that controversial figure, Jacob Leisler, assumed the governorship. His execution in 1691 split the colony wide open, and led to a bitter factionalism which lasted for many years.

From a public health standpoint, the political developments had little effect. No drastic changes were made in the city administration, save for a liberalizing of the city charter in the 1680s, and the City Fathers found themselves facing essentially the same problems that had confronted their predecessors. The English public health concepts differed little from those of the Dutch. For example, the College of Physicians of London in 1636 listed as "annoyances" likely to promote the bubonic plague: standing pools of fetid water, dirty streets, "laystalls" (garbage or rubbish dumps) located near residences, overflowing burial grounds, failure to clean the sewers and town ditches, and the use of rotten food by the poor.³

When the Great Plague, as it was known, struck London in 1665, the Privy Council issued a series of orders designed to minimize its effect. A strict quarantine was placed around all infected buildings; public gatherings of all sorts were forbidden; the streets, alleys, markets, and all buildings were to be kept "sweet and clean"; fires were to be kept burning in order to purify the air; and "no unwholsome Meats, Stinking Fish, Flesh, musty Corn or any other unwholsome Food [was allowed to] be exposed to Sale in Shops or Markets." In addition, pesthouses were set up, to which victims of the epidemic were sent. Houses from which the sick had been taken were quarantined for forty days and the entire residences fumigated and whitewashed with lime. As a final precaution, victims of the plague were not to be buried in the churchyards except in unusual cases, and quantities of quick lime were to be put in the graves of all victims.⁴

Three concepts are implicit in all of these measures: first, a recognition of the relationship between dirt and disease; second, the

principle of contagion, that is, the disease could spread by direct contact; and third, the danger from an impure food supply. These concepts were basic to public health in the Western World throughout all of American history, and modified and expanded, they still have validity today.

Street Cleaning and Sanitation

In examining the records of New York City during the first fifty years of the English period, it is evident that street cleaning and sanitation was a major concern of the city officials. Aside from esthetic considerations, "noysome" odors from rotting carion and garbage were considered a potential cause of what was called an "epidemic atmosphere." Consequently, the records are filled with complaints of citizens and officials about the condition of the gutters, streets, and vacant lots. The significant point is that the responsible officers usually took remedial action.

The practice under the Dutch of requiring householders to clean the streets in front of their homes and businesses remained unchanged. As the city grew, however, overseers were appointed to lay out and pave the streets. All paved streets were to have a gutter flowing down the middle. Around 1670 the earmen, or cartmen, petitioned the Governor to grant them a monopoly in their trade. He agreed to limit the number of cart licenses but required the carmen to perform two services in return for their monopoly. First, they were to fill up all "breaches" in the roads, and second, they were to be responsible every Saturday for removing the piles of dirt, rubbish, and garbage from the streets. For this latter duty, they were to receive ten stivers per load. As before, the owners or tenants were responsible for sweeping the dirt into piles and for loading it onto the carts. All residents were prohibited from dumping garbage or rubbish in the streets. In 1671, when several inhabitants were accused of "casting filth before their houses," the Mayor's Court ordered that one John Sharp be responsible for reporting the names of the guilty persons to the sheriff.5

Apparently the system worked fairly well for a few years, but by 1675 the citizens were becoming careless. In December the Mayor and Council publicly notified the inhabitants of their responsibility for cleaning the streets every Saturday and warned them against obstructing the streets with wagons, carts, sleds, timbers, "Dirt, Mucke, or Stones. . . ." The following month the Council provided a three shilling fine for any householder guilty of such actions, and informed the carmen that any of them neglecting his duty to haul away the dirt would be liable to lose his license. A year later the same abuses still persisted, and the Council, in noting the general failure to observe the street cleaning regulations, sternly rebuked those guilty, declaring that they must "Take Notice Thereof at their Perrills and That They That offend shall bee proceeded against Accordinge as the Said Order directs."

It was during 1675, too, that the Heeregraft was ordered filled. In all likelihood, as the town grew, it had become impossible to keep the canal clean, while at the same time, it may have impeded traffic. Individual householders along the banks were held responsible for filling in the canal and for paving this new ground level with the street (the present Broad Street).

Late in 1683 Governor Thomas Dongan granted a liberalized charter dividing the city into six wards, each of which was to elect an alderman and an assistant. The six aldermen and six assistants, along with the Mayor and Recorder, were to form a Common Council with full powers to make all laws and ordinances, provided only that they conformed with those of England and the province. The new Council promptly reenacted the existing street cleaning regulations. The following year another council order placed responsibility for enforcing these laws upon the constables in each ward.8

The first modification of the street sanitation laws came in 1691. Up to this time each citizen had been responsible for loading the dirt into the carts. In April the Council decided that, if the householder wished, the carmen could do this work for a set fee of threepence. A week later the Council again prohibited the throwing of garbage and rubbish into the streets. In an effort to improve the enforcement, the Council provided that one-half of the fine would go to the informer and the other half to the city. In 1693 the same orders were reissued. An even more significant modification was made two years later, when the Council passed a law "Impowering This City to Lay A Tax for the Cleansing and Paveing the Streets." A Mr. Vanderspiegel agreed to supervise the street

cleaning for a salary of 30 pounds a year, whereupon the Council appointed a special committee "to make an Estimate of the Estates of all and Every [of] the Inhabitants and Freeholders within this Citty for the raiseing the thirty pounds aforesaid. . . ." Subsequently the Council minutes show payments to Mr. Vanderspiegel and others for their duties as "scavengers." As near as can be gathered, the chief responsibility still lay with individual citizens. Presumably the scavenger was to remove dirt and rubbish in instances where the responsibility could not be placed upon an individual citizen. The important point is that for the first time the city was spending tax money for street-cleaning purposes.

Although the city continued to maintain at least one scavenger on the payroll, the sanitary system remained basically the same. For example, an order in 1699 appointed two aldermen to see "that the Cryer doe Give Notice to the Inhabitants Every Saturday Morning to Clean ye Streets and Sweep ye Dirte on heaps before their Respective dwelling houses." The same order called on the sheriff, constables, and other officers to see that the street laws were duly executed. Over and above the normal problem of garbage and rubbish in the streets, the lack of a sewage system created an even worse situation. In 1700 the Council noted that "Severall Illdisposed persons doe make A Common Practice of Emptying Tubbs of Odour and Nastiness in this Citty. . . ." They were ordered henceforth to "Empty their Odours into the River & no where Else" under penalty of a forty shilling fine. 10

A tentative step in the extension of the city's responsibilities was undertaken in 1701 when the assistants in each of the wards were instructed to ask their constituents how much they would be willing to pay to have the streets cleaned and the dirt carried away. Nothing seems to have come from this suggestion, since shortly afterward the Council passed a street-cleaning ordinance containing essentially the same provisions which had endured for so long. In the ensuing years, however, the Council does appear to have increased the number of scavengers on the city payroll. For example, in 1712 an agreement with John Cromp provided that he was to be the scavenger of Broad Street from the dock to "the Cross Street that runs from the broad way to the Dutch Church. . . ."¹¹ Despite the Council's few hesitant moves in the

direction of taking over the duties of street cleaning, the tradition of individual responsibility continued down to the end of the century.

Public Nuisances

One of the most common nuisances in pre-sewer days was the privy. As has been shown, the practice of permitting privies to overflow into the streets had been forbidden earlier, and the City Council reinforced the restriction in 1600 by ordering that neither privies nor hog pens could be erected on the street side of building lots, nor could they be placed in any way as to offend neighbors. 12 Other than occasional complaints about people emptying tubs full of night soil into the streets, the records are surprisingly quiet on this subject. The first demand for a public sewer was made in 1696. In response to a petition by the inhabitants of Broad Street, the Council established a special committee "to make an Estimate of what the Said Common Sewer will Cost. . . . " A month later the committee estimated the length of the sewer at 1,158 feet and placed the cost at about 15 shillings per foot. No further progress was made until the summer of 1703. Urged on by further petitions, the Council finally authorized the project. and it was completed in November,13 It should be borne in mind that the word "sewer" refers to an open or covered dirch designed to carry off surface water. Inasmuch as the contents of privies, dead animals, and general garbage were often deposited in the streets, these ditches soon became sewers in fact as well as in name.

Once committed to building a sewer, the city slowly found itself becoming more involved. Appropriations had to be made for cleaning and repairing it, and in time the sewer had to be lengthened. Moreover, this first sewer, like all of those constructed for the next 150 years, poured directly into the slips between the piers. Since the piers prevented the current from carrying away the material thus deposited, the docks became exceedingly foul smelling. Moreover, in times of heavy rain, the accumulated dirt, sand, and general debris which was swept down the sewer gradually filled up the slips. Thus as early as 1717 the Council had to appropriate 500 pounds "for alterring the Course of the Common Sewer at

the end of the broad Street and for Cleansing and Scowring the Dock of this City...."

The lesson was not learned, however, and the city continued to spend money dredging the slips until long after the Civil War.

The low marshy ground upon which the original town was located created serious drainage problems, one of which was a tendency for cellars to flood during times of high water. A certain John Marsh made an early attempt to mitigate this evil. In 1704 the Council gave him permission to experiment with a device for "drayning of the Cellars of this City att his own Charge. . . ." If he succeeded within a year and a day, he was to be given a monopoly on the work. ¹⁵ Nothing further was heard of his project, so presumably he was unsuccessful.

Noxious trades have always been a source of complaint, and in colonial days tanneries and slaughterhouses were usually the chief offenders. Under the Dutch administration, the authorities had refused to intervene with respect to noxious trades, but in June of 1676 the Common Council decreed that because of "the annoyance thereof to ve Inhabitants" all slaughterhouses and tan pits were to be removed from the city limits. Eliminating the tanneries presented no problem. Fresh meat, however, was essential; hence the question of slaughterhouses continued to plague officials, and in 1677 the Council ordered the erection of a public abattoir extending over the water at Smith's Slip on the East River. 16 The private abattoirs were moved outside the city, and, in conjunction with the public slaughterhouses, for a number of years were able to provide adequate meat supplies. In 1691 the Council repealed the prohibition against killing animals in the city, but ordered that the meat be sold only in the two public markets.

In the meantime as the city spread, the butchers, who in 1676 had moved out into the country, gradually found the city encroaching upon them. In 1696 the Council declared that the slaughterhouses on Queen Street near the city gate had become a public nuisance "by the Noisome Smell of ye filth thereof," and ordered them closed. The concession which had been made to the butchers in 1691, permitting them to kill animals, was revoked in 1698. An ordinance in November forbade any slaughtering except at the municipal abattoirs under penalty of 10 shillings. The same law took cognizance of another nuisance, that of driv-

ing cattle through the streets to the slaughterhouses. It ordered that all cattle must be landed "att the Nearest Convenient place to the sloughterhouses" under penalty of three shillings.¹⁷

A perennial nuisance was presented by the dozens of hogs that roamed the streets, serving both as scavengers and as a major food supply. The Dutch officials had repeatedly tried to deal with this issue, but it remained to trouble their successors. Zealous municipal officers could occasionally drive hogs from the streets, but once the enforcement of the laws relaxed to even the slightest degree, the piggeries opened their gates and the hogs cheerfully resumed their customary pastime of rooting up streets, gardens, and alleys. Early in 1673 the Mayor and Council were urged to "finde out some Expedient for ye Clearing the Town of them. . . ." A few months later the Council ordered the owners to confine their hogs or face having their animals confiscated.\(^{18}\)

The following spring another hog law was passed. The preamble, which clearly showed that the previous laws had been meaningless, stated: "Whereas daily experience hath shown that notwithstanding previously published Ordinances and Edicts, serious damage is done to the fortifications of this city by Cattle and particularly by Hogs which run and are kept in herds along the public streets. . . ." It further declared that the hogs "also cause great stench and filth within this City," help to infect the streets, and thus engender serious sickness. On these grounds, hogs and all other animals were forbidden to roam at large. Any hogs found in the streets were to be confiscated, and the owners of horses or cattle found at large were to be fined 25 guilders. ¹⁹

Within a year or two the Common Council was again warning the inhabitants to observe the hog law. In an effort to improve its enforcement, in 1683 a new law provided that half the proceeds from impounding hogs should go to the city officer responsible for catching them and the other half to the city treasurer. Two years later the provincial assembly passed a law permitting town officials to kill all swine found at large on city streets. The hog owners must have been a powerful pressure group, for two years later the law was repealed.²⁰ In the meantime, the New York officials continued to fight their losing battle with the pigs. Every year or two a new law, framed much like its predecessors, was passed, and between times stern warnings were repeatedly issued.

The very frequency of the Council's appeals indicates that while the hogs may have had to make an occasional strategic retreat, they generally managed to hold their ground.

Water Supply

Prior to 1677 the digging of wells was strictly a private matter. The only existing public well and pump was one which had been dug for the Fort. In this year Mayor Stephen Van Cortlandt and his Council ordered the inhabitants in each of six streets to dig public wells.²¹ No appropriation of city funds was made, indicating that the individual citizens had to bear the full cost. Nine years later the Council set up a special committee to look into the water situation. On the recommendation of this group, the Council in September of 1686 ordered that nine public wells be dug. These were to be built of stone, with the residents on the individual streets paying half the cost and the city paying the other half. Here again, as with the sewers, the city was reluctantly drawn into spending tax money for public services. In succeeding years, the Council assumed responsibility for maintaining the wells, although its members were generally hesitant about using the limited municipal revenues for this purpose. For example, an order issued on November 6, 1696, placed responsibility for the public wells upon the alderman and councilman in each of the wards. They were instructed to "Supervise the Public Wells of this Citty And take Care that they be kept Sweet Usefull and in Good Repair. . . ." They were, however, to see that "the Inhabitants of each Respective Ward doe Contribute to the Charge thereof."22 As the city grew, the number of wells increased, but the water from these shallow wells was always brackish and never too plentiful. With the exception of the spring which later became known as the "Tea Water Pump," and which was well outside the city limits at this time, there was no really good water in New York City.

Market and Food Regulations

The paternalistic control of breadmaking and butchering by the Dutch was not in the least diminished under British rule. The city continued to appoint two inspectors or "Censurers of all the Bread . . . Baked, and put to Sale by any Public Baker." When crops

were poor and food shortages developed, the Council had no hesitancy about seeing that the citizens "gett bread for their money." In June of 1676 it ordered all bakers to bake and sell "both biskett and household Bread" or forfeit their right to bake. The following year the Council noted that crops had been good and expressed the hope that "the Poor may Reape the benefitt thereof and have Bread at Reasonable Rates." To ensure this, the Council issued a price list for all types of baked goods, warning again that any baker who overcharged was liable to lose his license. ²³

The Council evidenced a strong interest in the condition of bread, and occasionally bakers were summoned before the Council for adding commeal to their bread or adulterating it in some other fashion. In time of shortages it was resolved that the Mayor and aldermen should meet once every three months, "Or oftener if they See Cause," to determine the price and quality of the bread offered for sale. In 1685 the Council appointed two bakers who, upon request of any municipal officer, were to pass judgment upon the quality of bread offered for sale. They were also asked to submit to the Council "a List of what Bakers are Necessary and fitt for that imployment within this Citty. . . . "24 During the fall of 1696 when food was in particularly short supply, the aldermen and assistants were requested to determine how much flour, wheat, and bread was available in each ward. In addition, a special committee was appointed to find the most effective means for bringing corn into the city. In 1711 another ordinance further tightened control over the bakers by requiring them to stamp their initials upon all bread offered for sale. Any bread found unstamped was to be forfeited and distributed to the poor.25

The bread regulations arose from a direct concern with the health and welfare of the poor. The meat and flour regulations were twofold in nature. Many of the laws were concerned with the packing of meat, fish, and flour for shipment. Since the export of poor quality meat or other products was unsound business, the city began protecting its commercial reputation early by appointing inspectors, and the practice continued through the colonial period. In 1668 the meat inspector was expected to see that the "whole halfe or Quarter" was packed and "that the best be not left out. . . ." He was also to see that the meat was well seasoned, and that each cask was sound and fully packed. In 1676 a "head

Viewer or Cure Master of the flower" and two deputies were appointed to inspect all flour for export. No one was permitted to close a barrel before the viewer or one of his deputies had inspected its contents. A year later, in response to what was described as many complaints coming from abroad, the Council ordered that henceforth all bakers were to put their own brandmark on any barrels of flour intended for export.²⁷ As with all laws, these meat and flour regulations were only as good as their enforcement, and the controls were never too effective.

The municipal slaughterhouse built in 1677 may well have served as a public market, although the first regulations with respect to such an institution seem to have been made by Governor Thomas Dongan in 1683. The Common Council objected to these regulations, and the Governor rescinded his orders in 1684, leaving the Council free to make its own rules. The city promptly established a marketing code which was designed to promote honesty and guarantee quality. From a health standpoint the most significant clause declared: "Noe unwholesome or Stale Victuall Shall be Sold in the Markett undr the Payne of forty Shilling Noe Blowne meat nor Leprous Swine Shall be Sold in the Markett under the Paine of forfeiting the Same and forty Shilling." In 1691 a new market was opened, and, as the city grew, additional markets came into existence.28 The Common Council retained an active interest in these markets, probably because its constituents, in a day before chemical additives and complicated food processing made the consumer unaware of what he was buying, were acutely conscious of any abuses relating to the food supply.

The State of Medicine

As its population and wealth increased, New York began attracting better physicians and surgeons. Most of these newcomers were products of an apprenticeship system, but a number were medical graduates. The polyglot population of the town was reflected in the diverse nationalities of its medical men. For example, when suspicious circumstances led the Provincial Council to request an autopsy on the body of Governor Henry Sloughter in 1691, the six physicians and surgeons selected to perform it were headed by a Dutchman, and included one Scotsman, one German, two Englishmen, and one Frenchman!²⁹ The career of Samuel Megapolen-

sis, a colonist, shows both the rising quality of medical education and the close relationship between medicine and theology. After graduating from Harvard College, Megapolensis received degrees in theology and medicine at the University of Utrecht. Subsequently he returned to New York to assume the pastorate of one of the churches.

A number of doctors held political office and took active roles in the community. Megapolensis, for example, was one of the commissioners appointed by the Dutch to negotiate the transfer of New Amsterdam to the English. Other physicians served in the Provincial Assembly, and Dr. Johannes Kerfbyle, the surgeon in charge of the Sloughter autopsy, was appointed to the Governor's Council in 1698,30 Lest the foregoing give the impression that physicians ranked high in colonial society, it should be pointed out that when Jacob Leisler assumed control of New York in 1689, it was said that he elevated many "humble folk" to high positions. Among the "members of the lowly professions" who were appointed to the Governor's Council was the physician, Dr. Gerardus Beekman.31 The wide diversity of the medical training of the New York doctors, ranging from a rude apprenticeship to university medical degrees, makes it difficult to generalize about the profession. Yet the proportion of medical graduates seems to have been relatively high, and the quality of medical care available for the colonists was at least as good, and probably better, than that in the other colonies.

When the Duke of York created a government for this new colony, one of the laws established a measure of control over the medical profession. It stated that no "chirurgeons, midwives, physicians, or others" should practice any form of medicine "without the advice and consent of such as are skilful in the same art (if such may be had), or at least of some of the wisest and gravest then present...." The regulation went on to state that it was "not intended to discourage any from all lawful use of their skills, but rather . . . to restrain the presumptuous arrogance of such as, through confidence of their own skill or any other sinister respects, dare boldly attempt to exercise violence upon or towards the body of young or old. . . . "32 This law, which was almost identical with one passed in Massachusetts in 1649, could scarcely be called a licensure measure, but it does indicate concern about the

quality of medical care. Governor Francis Lovelace in 1671 provided an interesting commentary upon the state of the medical knowledge when he ordered "all Persons of this City who Profess ye Art of Chyrurgery & Physick or any others who have Skill & Judgmt therein" to hold a consultation on Pearl Street over the condition of a widow who was troubled with "a sore Legg."³³

It is quite likely that the widow was a charity case. Up to 1685 the poor were dependent upon the church deacons, who collected contributions by means of the "poor boxes." In the latter year, responding to a letter from the Governor, the Common Council ruled that the aldermen in each ward were to certify to the Mayor the names of the deserving poor,34 Once committed to assisting these unfortunates, the city soon found itself giving them medical care. In 1687 Dr. Kerfbyle was designated physician of the poor at a salary of five pounds per year. As the population grew, the duties of the physician increased. In 1713, for example, Dr. Jacob Provoost was paid eight pounds per year for his services to the poor. A few years earlier the Minutes of the Common Council had mentioned an order to the Mayor requesting him to arrange for a "Hospital for the Maintainance of the poor. . . ." The word "hospital" was used in the sense of an almshouse, and the city did arrange with one of the local women to take certain paupers into her home.35

Epidemic Diseases

The great epidemic diseases that periodically swept the colonies did not spare New York. In September of 1668 Governor Lovelace proclaimed "a General Day of Humiliation" because of the "unusual sicknesse" whereby many were "dayly swept away & many more lying on their languishing bedds, expecting each houre their dissolution. . . ." True to his day and age, the Governor attributed much of the sickness to improvident living, intemperance and impiety. Noah Webster in his history of epidemic diseases described it as an "autumnal bilious fever in an infectious form." Neither of these descriptions gives any real clue as to the nature of the infection, but malaria and typhoid are two good possibilities. In 1679–1680 smallpox spread throughout New York. That fall a traveler visited a number of homes where he found many "children sick with the small pox. . . ." "We went into one house,"

he wrote, "where there were two children lying dead and unburied, and three others sick, and where one had died the week before." The exact impact of the disease upon New York City is hard to say, although it must have caused considerable disruption. The following June, Jasper Dankaerts recorded in his diary that there had been no military exercises in the city during the past year because of smallpox.³⁷

Following this outbreak, New York remained free of major epidemics for about ten years. In 1689 a slave ship from the West Indies was found to be infected with smallpox. The vessel was ordered to land about a mile from town and to avoid all contacts except for doctors and attendants. Whether the infection spread from this vessel or came from some other source, a major smallpox epidemic developed in the spring and summer of 1690. As early as March the presence of the disease led Jacob Leisler to request a group of commissioners from New England to meet outside the city. One account of the epidemic, which described smallpox as fatal to adults, stated that the disease was accompanied by "a sort of pleurisy (not cured but increased by bleeding) and violent fevers. . . ." Reflecting the spirit of the day, the writer commented that the sicknesses were "rather to be looked upon as a particular hand of God, than any inclination of ye climate."38 Interestingly, two visitors to New York in the late seventeenth century mentioned that fever and ague (malaria) was becoming prevalent. The disease was widespread in North America, but up to this time New York City seems to have escaped it.

The next epidemic outbreak proved to be a major disaster. Late in the summer of 1702 yellow fever cases appeared, and the infection spread rapidly. In September a newly arrived Anglican missionary wrote that he found "a very mournfull Town there dyeing near 20 Persons dayly for some Months." At the end of October another missionary reported that the disease had "proved mortall to many in the Town of New York where nearly five hundred persons dyed in the Space of three months. . . ." During the course of the outbreak, the Governor was compelled to appoint a new mayor, since the incumbent was expected to die. In addition, one alderman had died and the remaining councilmen were either sick or had fled to the country to escape the epidemic. By the time the fever had run its course, the death toll amounted

to 570. Inasmuch as the population was probably about 4,500, certainly no more than 5,000, the number of deaths was between to and 12 per cent, a virtual decimation.³⁹ In viewing these figures, one has only to recall the vivid accounts of other great epidemics to envision the gloom and despair in New York at a time when all economic activity had ceased and the sole preoccupation of the remaining inhabitants was caring for the sick and burying the dead. The mournful tolling of church bells and the ominous clumping of the horses' hoofs as hearses and carts wheeled their way through deserted streets to the graveyards must have contributed to the general despair and chilled even the hearts of the bravest. But New York, like other cities, was to witness many more of these dark days before the bacteriological revolution of the late nineteenth century finally made it possible to conquer the major epidemic diseases.

Almost thirty years elapsed before New York endured another major outbreak. Measles ranged through the colonies in 1713, and at least a few cases appeared in New York. In the American colonies, measles was no mild childhood disease. The relative isolation of towns and settlements created a large nonimmune population. and the disorder usually struck adults and children alike. Five years later smallpox was found in New York, but the quarantine measures seem to have kept it under control. 40 By the beginning of the eighteenth century, malaria had become more common in the New York City area, A minister on Staten Island explained his failure to keep up with his correspondence on the grounds that he had been "sick of a ffever and Ague, Spring, Summer, and ffall." A few years later another minister at Rye wrote that ever since his arrival "the Ague and fever has as duly attended me and my family (sometimes alltogether) as ve Summer has come. . . . "41 While there is no doubt that in the eighteenth century malaria became a serious problem in the provinces of New York and New Jersey, there is not much evidence of its presence in the city. As the town expanded, undoubtedly many swampy areas were filled in and others drained, thus helping to reduce the mosquito population.

Summary

The first half-century of British rule was a period of rapid growth for New York, but it brought relatively little change in either health conditions or public health policies. The English and Dutch were essentially in agreement with respect to the causative factors of disease and to the means for prevention. The sanitary laws regulating privies, street cleaning, and public nuisances remained much the same and appear to have been reasonably well enforced. The food and building regulations also continued in force, and the only new feature was that city officials became a little more concerned over the water supply and began to regulate the digging and maintenance of public wells. The number of physicians increased with the growth of the town and a tentative effort was made to regulate the practice of medicine. Despite some criticism of their physicians and surgeons, it is safe to say that the average New Yorker was probably receiving as good medical care as his contemporary in England and Holland. The growth of the town had multiplied sanitary and health problems, but it was still relatively clean and, compared with its European counterparts, quite healthy.

Notes to Chapter 2

- 1. Stokes, Iconography, IV, 315.
- 2. Ibid., 451.
- Walter George Bell, The Great Plague in London in 1665 (rev. ed., London, 1951), 11.
- 4. Ibid., 333-35.
- 5. Records of New Amsterdam, VI, 272-73; Stokes, Iconography, I, 164, IV, 282.
- Minutes of the Common Council of the City of New York, 1675-1776
 (New York, 1905), I, 7-8, 13, 28 (hereinafter cited as M.C.C., 1675-1776).
- Stokes, Iconography, I, 169.
- 8. M.C.C., 1675-1776, I, 136-37, 167.
- 9. Ibid., 29, 224, 245, 247, 331, 376-77, 391, 420.
- 10. Ibid., II, 74-75, 103.
- 11. Ibid., 141, 144, 195-97, III, 12.
- 12. Stokes, Iconography, IV, 270.
- M.C.C., 1675-1776, I, 405, 407, II, 235-36; Annie S. Loop, History and Development of Sewage Treatment in New York City (New York, 1964), 4-7.
- 14. M.C.C., 1675-1776, II, 385, III, 141.
- 15. Ibid., II, 260.
- 16. Ibid., I, 20-21, 46-47.
- 17. Ibid., I, 244, 408, II, 65.

- Minutes of the Executive Council of the Province of New York. Administration of Francis Lovelace, 1668-1673 (Albany, 1910), I, 164; Stokes, Iconography, IV, 290.
- 19. Laws and Ordinances, 523-24.
- 20. M.C.C., 1675-1776, I, 13, 146; Stokes, Iconography, IV, 326.
- M.C.C., 1675-1776, I, 46-47; Hill and Waring, "Old Wells," in Historic New York, 310.
- 22. M.C.C., 1675-1776, I, 179, 181, 427-28.
- Records of New Amsterdam, VI, 111, 266; M.C.C., 1675-1776, I, 20, 29, 65-66.
- 24. M.C.C., 1675-1776, I, 140-41, 172.
- 25. Stokes, leanography, IV, 398; M.C.C., 1675-1776, II, 454.
- 26. Stokes, Iconography, IV, 267; Records of New Amsterdam, VI, 113.
- 27. M.C.C., 1675-1776, I, 20, 38-39, 66.
- 28. Ibid., 140; Arthur E. Peterson, New York as an Eighteenth Century Municipality Prior to 1731 (New York, 1917), 59-61.
- 29. Walsh, History of Medicine in New York, I, 36.
- 30. Ibid., 23, 25, 35-36.
- Supreme Court of Judicature of the Province of New York, 1691-1704, I, in New-York Historical Society Collections, 1945, LXXVIII (New York, 1952), 43 (hereinafter cited as N.-Y. Hist. Soc. Colls.).
- James J. Walsh, History of the Medical Society of the State of New York (Brooklyn, 1907), 11.
- 33. Stokes, Iconography, IV, 280.
- 34. Ibid., 334.
- 35. M.C.C., 1675-1776, I, 206, II, 68, 85; Stokes, Iconography, IV, 341.
- Minutes of Executive Council, I, 191–93; Noah Webster, A Brief History of Epidemic and Pestilential Diseases. . . . (Hartford, Conn., 1799), I, 202.
- 37. Henry C. Murphy, ed., Journal of a Voyage to New York, 1679-80, in Long Island Historical Society, Memoirs, I (New York, 1867), 129, 277; Journal of Jasper Dankaerts, 1679-80, Bartlett B. James and J. Franklin Jameson, eds., in Original Narratives Series (New York, 1913), 239; John Duffy, Epidemics in Colonial America (Baton Rouge, La., 1953), 71-72.
- 38. Stokes, *Iconography*, IV, 357, 359; "Mr. Charles Lodwick, his acet. of New York . . . dated from New York, May 20, 1692," in Sparks Mss., XXX, 95, N.-Y. Hist. Soc. Mss.
- 39. John Barrow to Secretary, Westchester, New York, December 1, 1707, in the Society for the Propagation of the Gospel in Foreign Parts Mss. (hereinafter cited as S.P.G.), A3, film pages 413-22; George Keith to Secretary, New York, November 29, 1702, S.P.G., A1, fpp. 71-84; Stokes, Iconography, IV, 436; A Century of Population Growth (Washington, 1909), 11; Duffy, Epidemics in Colonial America, 145-46.
- 40. Boston News-Letter, February 1-8, March 15-22, 1714; John Bartow to Secretary, Westchester, New York, April 14, 1714, in S.P.G. Mss., A9, fpp. 131-33; Duffy, Epidemics in Colonial America, 77, 168-69; Cadwallader Colden to Hugh Graham, New York, December 7, 1718, in Copy Book of Letters, Cadwallader Colden Papers, N.-Y. Hist. Soc. Mss.

41. Aneas Mackenzie to Secretary, Richmond County, New York, June 13, 1709, in S.P.G. Alss., A5, fpp. 58-61; Robert Jenney to Secretary, Rye, N.Y., May 6, 1725, B1, pt. 1, fp. 302; Duffy, Epidemics in Colonial America, 209-10.

The Comfortable Town of New York, 1720 to 1776

As the eighteenth century drew on, New York continued to flourish. By 1731 the number of houses was estimated at 1,400 and the population had risen to about 8,600. Despite this growth, it remained a pleasant and clean little town, one which elicited many favorable comments from its visitors. One of them praised the healthful situation of the city, "the Clime temperate, the Air serene," and added, possibly with tongue in cheek, "Here are no Phtisics or Consumptions, and so very few Physicians and Apothecaries that Peoples live to a very great Age." The well-built brick homes and the clean, paved streets especially pleased observers. A Swedish traveler, who visited New York in 1748, wrote that the brick homes were "generally strong and neat, and several stories high," and the walls "whitewashed within. . . ." The city, he continued, was "thought to be as healthy a spot as any in the world." Although the eastern and southern sections were low, the rest of the town was built on dry elevated soil. The streets were irregular, but they were paved with round pebbles and kept clean.¹

Lord Adam Gordon, a British travel writer, attributed the cleanliness of New York to the elevation of the city, which permitted streets to be "washed by every rain." Without exception, all who came to New York City commented, as they had done in the previous century, upon the neatness, orderliness, and cleanliness. From an economic standpoint, the excellent harbor and fine location virtually guaranteed that the city would expand as the colonies began peopling their seemingly limitless lands. By the time of the Revolution, the city's population was well in excess of 20,000.

The eighteenth century, one which witnessed an almost continuous struggle between England and France, was no period of peaceful development for the British colonies. As the names of Queen Anne's War, King George's War, and the French and Indian War attest, the colonies were invariably drawn into the European power struggles. At the same time the clash between the colonists and their British administrators was helping to pave the way for the momentous events of the American Revolution. Fortunately for New York City, it was remote from the frontier and neither the Indians nor the French presented any real threat. The Revolution was another matter, but despite economic fluctuations, the first seventy-five years of the eighteenth century were years of general progress.

Street Cleaning and Sanitation

Educated and responsible colonials quickly recognized the association between dirt and disease, and they made recurrent efforts to improve sanitary conditions in the city, particularly as the increasing population intensified the problem of communicable diseases. The two most serious were smallpox and yellow fever. The former was recognized as a contagious disorder which could be kept at bay by proper quarantine measures; the latter was, and remained for almost two centuries, of unknown ctiology. There was, however, a strong feeling that it originated in putrefying organic matter, and thus yellow fever, along with the various other "fevers" which periodically visited New York, gave an impetus to the early sanitary movement.

In 1731 Governor John Montgomeric granted a new charter to New York City, but it made no basic changes in the city administration. Despite protests from leading citizens, the Governor continued to appoint the Mayor and leading officials. Acting under the new charter, the Common Council passed a street-cleaning law late in 1731. Essentially it repeated the provisions of the old regulations. The inhabitants were responsible for sweeping the dirt into piles and the cartmen were to carry it away each Saturday. If the cartmen loaded the dirt into the wagons, they were permitted to charge the householder a set fee. The earlier prohibition against throwing dung, excreta, and other obnoxious matter into the streets was also reenacted. A new regulation, which probably arose from the city's having to pay for dredging the slips, ordered that no inhabitants "Shall hereafter in the time of Rain or Floods,

Sweep the soil or Dirt of the Streets into, or near the Channel [gutter] of any of the Streets of this City....³³

No significant changes were made in the street-cleaning laws for the rest of the colonial period. Occasionally when the townspeople got careless, the Council would firmly remind them of their obligations. In 1744, for example, the Council ordered that "the Law for Cleaning the Streets, Lanes and Alleys of this City be Published in all the publick papers; and that forty of them be Separately printed and Affixed up in the Most publick places with Notice that for the future the Breach of the Said Law will be duly punished."4

The low-lying, poorly drained land in and around the city made New Yorkers quite apprehensive over the danger of sickness, and these fears were intensified when a series of epidemics bore heavily upon the population. Measles struck in 1729, smallpox in 1731, and in 1732 both vellow fever and some type of respiratory disease appeared. This succession of disorders was probably responsible for making the Common Council sympathetic to the plea of one Anthony Rutgers in 1733 when he requested permission to dig a drain from the swampy land near the Fresh Water Pond to the Hudson River. He explained that he had been granted the land by the King and intended "to Clear the Whole and drain the same which when perfected . . . will greatly Contribute to the health of this City and all the Inhabitants thereof dwelling Contiguous thereunto." Subsequently he petitioned for an additional amount of land upon which to place the machinery necessary for the drainage program. This petition, too, was granted and by the end of the year his ditch or drain was completed.5

The gradual extension of the city into reclaimed land undoubtedly created health problems, since the cellars in these areas were invariably damp or flooded. In the summers of 1741 and 1742 a series of "fevers" attacked New York City. Moreover, yellow fever, a mosquito-borne disease, appeared widely in the American colonies in the early 1740s. Since the threat of this fearsome disease invariably led governmental officials and responsible individuals to re-examining sanitary conditions, it is not surprising that in 1743 Cadwallader Colden felt impelled to publish a pamphlet on yellow fever and its predisposing causes. Colden, who was then Surveyor-General of the Province and a member of the

Governor's Council, is best known for his historical writings and political activities. He began his career, however, as a practicing physician, and he was without question the first significant medical figure in New York.

In his essay on vellow fever Colden first gave a brief history of the disorder and then turned to the conditions in New York which he felt were likely to provide it with a fertile breeding ground. Yellow fever, he asserted, always broke out and was most prevalent in New York City in those areas which had been "built upon a swamp, or moist slimy ground . . ." and in the vicinity of the docks and slips into which "the nastiness of the town is thrown. . . ." The cellars of the buildings in these areas were always damp and the drains were seldom kept in proper working order. Not only did vellow fever plague these sections, he wrote, but every summer "epidemical disorders" struck down infants and children. He denied the allegation that the high mortality among these children resulted from eating fruit, pointing out that country children, who had even more access to fresh fruit, did not die in such numbers. The real causes, he asserted, lay in the deleterious atmosphere and the sanitary conditions of the city.6

After having stated what he felt were the predisposing conditions, Colden then made specific recommendations to the New York City officials. First of all, it was necessary "to drain out the slimy, wet grounds; to fill up the slips; [and] to take care that all the filth and nastiness of the town be emptied into the stream of the river. . . . " The city must enact effective regulations on these matters and "put them diligently in execution." Much of the problem arose, he said, because the drainage system was in the hands of private individuals and rested upon a voluntary subscription, thus "depending on the humours and inclinations of a great number of persons, many of them penurious, negligent, and insensible of the prejudices which follow, on the drains not being kept in good order. . . ." The only solution was to place the responsibility in the hands of the city, for "then every one, since it would cost him no more, would be desirous and careful to have his cellar clean and dry, and his nostrils freed from an offensive stench." The responsible officials, however, must be "men of Known industry, and zeal for the welfare of the town...."7

Touching upon the debate over whether yellow fever was of

foreign origin or was generated spontaneously in dirt and filth, Colden declared that even if the disease were imported, "this does not make it less necessary to drain the wet and moist grounds in and about the city, and to keep it clean and sweet; For it is well Known that some airs and constitutions of the atmosphere are much more proper to feed and propagate infection than others...."8

Urged on by Colden's pamphlet and apprehensive over the recurrence of the summer fevers, in November of 1743 the City Council requested the Provincial Assembly for legislative action, declaring that it had "for this two or three years past, been visited with violent Fevers, which not only carried off many of the Inhabitants, but likewise obstructed their Trades and Commerces. . . ." The fevers were thought to be "occasioned by the Filth and Dirt lying in the Streets and Slips, in the Heat of Summer, together with offensive Trades being carried on, and Hogs and Dogs kept within the same. . . ." Early in 1744 both city and provincial officials were preparing to take action upon Colden's recommendations. In January, James Alexander, Colden's son-inlaw, wrote to him that his pamphlet had convinced the "Majority of our Magistrates" of the need for removing the nuisances. "All whom I have talkt to on this head," he added, "think themselves & the City very much oblidged to you for that paper...."9

In May of 1744 the Provincial Assembly passed a comprehensive act entitled "A Law to Remove and Prevent Nusances within the City of New York." Many of the provisions were concerned with the noxious trades—tanners, dyers, starch makers, fish mongers, and so forth. The law specifically prohibited them from carrying on their work in certain areas and placed restrictions upon their disposal of wastes. For example, one provision stated that "no Dye of Hatters or other dyers or Corrupted Noisom Water of Starch Makers Shall be Poured or Suffered to Run into the Channells of the Streets of this City Either by Night or by day..."

In the meantime, the Common Council had been preparing its own program. During the winter a grand jury had investigated the charges made by Cadwallader Colden and conceded their validity. In February the Board of Aldermen, "having Taken into Consideration the Indictment of the Late Grand Jury of this Cor-

poration for Sundry Nusances," appointed a committee "to Examine into the Said Nusances and Consider how and in what Manner the Same ought to be Removed. . . ." Two weeks later the committee reported that Beekman's Slip, Burling's Slip, and Old Slip were in a deplorable condition and that the Fly Slip was "a great and Intollerable Common Nusance and must be Removed at the Charge and Expense of this Corporation. . . ." The committee added "that the filth, Dirt and Nastiness under the Meat Markett and the Ground fronting the Same" should also be removed. The Common Council promptly created a special committee, and authorized it to spend up to two hundred pounds in carrying out the recommendations of the original committee.

On May 3 the Common Council promulgated a sweeping sanitary ordinance based on the law just enacted by the Assembly. Reflecting the then current epidemiological concepts, the preamble stated: "... the health of the Inhabitants of any City Does in a Great Measure Depend upon the Purity of the Air of that City and that when the Air of a City is by Noisom Smells Corrupted Distempers of many Kinds are thereby Occasioned. ..." Varying fines were set for each offense against the sanitary code, and, in order to make the regulations more effective, the fines were to be divided between the individual responsible for prosecuting the offender and the church wardens, who were to use their share for the benefit of the poor. 12

Cadwallader Colden, who deserves chief credit for these reforms, did not rest upon his laurels. He was all too aware of the unremitting pressure necessary to keep officials on their toes and to keep the public from becoming apathetic. In December of 1744 he wrote to one of the aldermen asking him what measures the city officials had been taking toward keeping the city clean and healthy. He urged that those officers who had done a good job be publicly commended so that they might be encouraged to further efforts. During times of political party disputes, he concluded sagely, many elected officials make "a great bustle" about the public welfare, but once the elections are over, they show no further concern. 13

Influenced by the threat of yellow fever, which hovered over the city for several summers, the municipal officials enforced the sanitary laws quite effectively in the succeeding years. When the drain or sewer from the Fly Market to the East River became a nuisance, the Council, noting that it had gone to "a Very Great Expence" to construct the drain, forbade ships, sloops, scows, and other vessels to anchor or lie aground in the slip in such a manner as to obstruct the mouth of the drain. Although this ordinance helped, the drains or open sewers remained a constant source of difficulty. In 1751 the Council appointed a committee to investigate this same Fly Market drain and determine whether or not it would be feasible to construct an underground sewer. The committee concluded that it would "be attended with so Great an Expence as Neither the Neighbourhood or the Corporation of this City would Consent to allow. . . . " As an alternative, it recommended that the drain be cleaned and repaired at public expense and that the slip into which the drain emptied should be dredged so as to leave twelve inches of water at low tide "which will keep the same sweet & prevent its being a Nuisance. . . ." The following year another committee was appointed to examine the drain from the meat market and to recommend ways to prevent it, too, from becoming a nuisance.14

Occasional complaints were made about general sanitary conditions, but these seem to have been the exception rather than the rule. An editorial note in the New-York Gazette sarcastically observed in 1749 that the citizens obviously enjoyed breaking laws "or else imagine the Doctors want employ; why else should Fish Guts and Garbage be lodged on almost every Dock and Street throughout the City. . . ." The editor asked why those who dumped their garbage on the docks did not take a few extra steps and throw it where the tides could take it away, "or do they think," he concluded, "if Infections should ensue, that they themselves will escape?" 15 Yet the scarcity of adverse comments in the newspapers, diaries, and other historical sources supports the universal agreement among travel writers that New York, as compared with other eighteenth-century cities, was clean and neat.

During the thirty years following the passage of the Sanitation Act of 1744, the city records, too, have little to say about sanitary conditions. Periodically the Council would appropriate funds for cleaning the common drains or for filling in certain slips. ¹⁶ Sometimes private individuals would petition for the right to fill in a slip at their own expense—a petition which the Council was usually

inclined to grant. Thus as the city expanded, marshy areas and ponds were gradually eliminated and the low-lying land along the shores built up.

Public Nuisances

The Sanitation Act of 1744 eliminated the worst abuses arising from the noxious trades by requiring them to move outside the city limits to the area adjacent to the Fresh Water Pond. Periodically the public markets needed cleansing and the Council seems to have recognized its responsibility in this respect. The laws against dumping offal, garbage, and so forth into the streets, alleys, and vacant lots were enforced fairly consistently. While the harsh criticisms levied by Cadwallader Colden in 1743 give a very discouraging picture of New York's sanitary condition, it should be remembered that Dr. Colden was a man with a cause. And if it is true that conditions did get out of hand on occasions, New York was no different from any other town in the eighteenth century—nor the twentieth century for that matter. By and large, the city can be given a favorable bill of health for the remainder of the colonial period.

Two perennial nuisances were the presence of loose hogs and dogs in the streets. In the seventeenth century the chief protests were against the pigs, but in the eighteenth stray dogs occasioned most of the complaints. In 1727 the Common Council inveighed against the "very great Number of Mischievious Mastiffs Bull Dogs and Other useless Dogs" which chased horses, cattle, and coaches in the daytime and threatened the lives of cattle and the townspeople at night. The constables in each ward were ordered to warn all citizens to keep their dogs tied after dark. Rabies does not appear to have caused any apprehension until about the middle of the century. One of the New York newspapers in 1751 mentioned that mad dogs had been reported in Elizabeth Town, New Jersey. The following year a little girl was infected in New York, and a series of articles appeared giving purported cures for rabies. The many "certain cures" which were reported in newspapers, magazines, and medical publications in the eighteenth and early nineteenth centuries are a real tribute to man's eternal hope. By the mid-century, if we are to believe a letter to the editor of the Reflector, the dog situation was getting completely out of hand. The writer complained that there were at least a thousand stray dogs, and asked for a law to rid the city of them.¹⁷ The rabies scare, however, died down and little was done about the dogs.

Several acts were passed forbidding hogs from running loose, but the repeated complaints of earlier days are noticeably absent until the later years of the colonial period. The General Assembly passed a hog law in 1730, and fourteen years later an even more sweeping act was passed. No hogs were to be kept in New York City south of the Fresh Water Pond under penalty of a three shilling fine. In 1760 this ordinance was repealed. Whether it was repealed in order to make way for a new law is not clear. Ten years later the Common Council mentioned that although swine were prohibited from running at large in New York City by virtue of an act of the General Assembly, numerous complaints had been made about them. The Council ordered that after December 15, 1770, all such animals found on the streets should be impounded and their owners made subject to the penalties prescribed by law. 18 This latter ordinance indicates that the existing hog laws, as was so often the case, were honored far more in the breach than in practice. Although these laws were designed primarily to eliminate a nuisance and source of irritation, early health leaders believed that the stench from the hogs and their tendency to wallow in filth was a real hazard to public health; hence they added their voices to the demand for adequate hog laws.

Water Supply

The growth of New York in the eighteenth century accentuated the lack of good water. The travelers who commented favorably upon the city's appearance rarely failed to mention the poor quality of its water. Dr. Alexander Hamilton in 1744 described it as "hard and brackish." Those who could afford to buy drinking or tea water obtained it from the authorized water carriers, who brought it from springs outside the city. This water, he wrote, was carried "on a sledge in great casks. . . ." A few years later a Swedish visitor inadvertently made an even more devastating comment upon the water situation. After mentioning that those citizens "who are less delicate" use the city well water, he remarked that this "want of good water lies heavy upon the horses of the

strangers that come to this place; for they do not like to drink the water from the wells in the town."¹⁹ Obviously it was fit for neither man nor beast!

Bad as the water might be, it was still necessary to have public wells. Undoubtedly there was some concern for those who could not afford to buy tea water, but the chief motivation seems to have been fire protection. A 1753 act relating to the public wells specifically mentioned that they had been of great service by providing a "Constant Supply of Water whereby great Fires have been Extinguished and prevented from Spreading." In 1741 a provincial act empowered the aldermen and assistants in the wards to appoint an overseer for each pump and well. The pumps and wells were to be kept in good repair with the expenses charged to the adjacent property owners. After noting that vandals often cut the well ropes and broke pump handles, the Assembly established a fine of 40 shillings for each offense.²⁰

Eleven years later, in 1752, the Common Council approved a bill "to Raise a Tax for mending and Keeping in Repair the Publick wells and pumps in the said City. . . ." The City Recorder refused his assent to the measure and the Mayor remained uncommitted. Whether or not their opposition defeated the ordinance is not clear, but the following year a similar act was passed by the Provincial Legislature. Once provision was made for maintaining the public wells, the next step was to regulate the sale of water from the "Tea Water Pump." This spring, located at Chatham and Pearl Streets, was about the only good water in the city. In 1761 the Common Council appointed a special committee to look into the "Regulating of the Severall Tea Water Men, in this City. . . ."²¹ Subsequently the water carriers were licensed and given a monopoly.

Shortly before the Revolution New York City took the momentous step of creeting a complete water system. The guiding spirit in this enterprise was Christopher Colles, a Britisher who came to America in 1765. He was an accomplished engineer and scientist, and a man of wide-ranging interests. On April 22, 1774, he proposed that the city erect a reservoir and "Convey Water thro' the Several Streets of this City." The Council deferred action until July 21 when, by a vote of eight to two, the members agreed

to support the proposal. The land which Colles proposed to use for his reservoir belonged to Augustus and Frederick Van Cortlandt, and on August 8 the Council agreed to buy the land for £600 per acre, provided potable water could be found under it. Colles promptly sank a well on the property, and the water was pronounced by the Council "to be of a very good quality." On August 25 the Common Council appropriated £2,500 to finance the project and gave Colles permission to start construction. A year later, as the work moved slowly along, another £2,600 was provided. In January and March of 1776 two additional appropriations of £2,000 were made.²² By the time the water system was ready for operation, the Council had issued 5 per cent bonds and paper bills in the amount of £11,400.

The water was pumped from wells into the reservoir and then distributed by means of hollow logs. Unfortunately, the wells on the Van Cortlandt property did not provide enough water, and the years 1775 and 1776 were scarcely propitious for a new venture of the magnitude of Colles' project. Colles, an able individual, might have succeeded under happier circumstances, but by sheer chance, his project got underway at the beginning of a major upheaval; it was doomed from the start.

Market and Food Regulations

The bread regulations which had been established in the seventeenth century remained relatively unchanged throughout the colonial period. Every three months, according to city law, the Mayor and Aldermen would publish the bread assize in the local newspapers, setting forth the required weight, price, and quality of all bakery goods. The price of bread fluctuated with that of flour but the weight and size of the loaves was quite standardized. When the city received its new charter in 1731, the bread laws were promptly reenacted-bakers to stamp initials on loaves, the Mayor and Aldermen to determine price and quality of bread every three months, and the Council to appoint bread inspectors. Few complaints were made against the bakers, and the enforcement of the laws were quite effective. In 1773 under the heading, "A Hint to the Bakers," one of the newspapers reprinted the section of the bread law requiring that white bread "be wholly made of Flour that has duly passed the Inspection,"23 Other than occasional reminders to the bakers, however, the evidence indicates that there was no serious adulteration of bakery goods.

In the days before refrigeration, the sale of meat and fish, both highly perishable goods, was always subject to close scrutiny by the authorities. Late in the seventeenth century the Common Council had licensed certain public slaughterhouses. Over the years, as the buildings became old and dilapidated and more difficult to clean, these slaughterhouses tended to become public nuisances. On February 9, 1721, one John Kelly requested permission to build new slaughterhouses on his East River property, arguing that the existing ones were dirty and disreputable. The committee appointed to look into the situation agreed with Kelly that the abattoirs were public nuisances and were depressing property values. In consequence, Kelly was granted a twenty-one-year monopoly on slaughtering, provided he erected three or more "substantial" buildings, constructed a large cattle pen, and kept all buildings in good repair "and sufficiently scoured & Cleansed." While Kelly was given sole rights, the Council reserved the power to provide additional slaughterhouses in the event that at any time he failed to provide adequate facilities. To guarantee Kelly's monopoly, a series of ordinances were passed in the succeeding years specifically forbidding slaughtering within the city limits except at the official abattoirs, Most of these ordinances were enacted as the city gradually extended its limits and incorporated areas which had been beyond the jurisdiction of earlier laws. For example, the Common Council in 1725 specifically prohibited slaughtering in any "House Barn Stable Out House Yard Orchard Garden Field or Other place" within the "Out Ward."21

Kelly maintained his lease until 1750, when the Council granted the contract to Nicholas Bayard upon the same terms. Bayard seems to have kept his place in order, for when he petitioned to renew the lease, his request was granted—although the new monopoly was to extend for only eighteen years. Rather surprisingly, when a group of citizens from the "Out Ward" petitioned for the right to slaughter their own cattle in 1770, the Council, after some delay, gave them the right to do so.²⁵ Small farms still existed on the fringes of the city and it was probably assumed that slaughtering by individuals for their own needs was not likely to create any local sanitary problems.

The laws against the sale of putrid or "blowne" meat were generally respected, and it was not until the mid-eighteenth century that serious complaints were made. In 1751 the magistrates seized two yeal carcasses and burned them in the street as "Carrion." "Besides the Loss of their Meat, there is a pretty great Fine for bringing any that is unmerchantable to Market, and," commented one observer, "'tis hoped this Instance of Justice will be a proper Warning to others at least for some Time." In 1768 nine pigs were seized in the Fly Market "as perfect Carrion." The meat was burned publicly and the owner fined 40 shillings. A year later, the Mayor, after noting that there is "great Reason to suspeet that many of the Butchers of this City make a practice of blowing the Meat exposed for sale," declared that he had appointed three inspectors to examine all meat on sale in the public markets. It was his intention, he said, to prosecute all who violated any of the meat ordinances.26 The Mayor's warning was probably sufficient, since New York was still small enough that local butchers could ill afford to face prosecution for selling bad meat. Hence the complaints against them were infrequent.

Although fish and ovsters were even more likely to spoil than meat, there seems to have been little concern about them in the early colonial period. Apparently a law had been passed against the sale of "unripe fruit or Oysters," for in 1757 it was modified by a clause which stated that during the months of May, June, July, and August no one was "to Give Sell, Utter, Offer or Expose to Sale or bring any Oysters within the City" under penalty of 20 shillings. A year later another city ordinance forbade the sale of bass during the months of December, January, and February on the grounds that fishing at that time of year reduced the catch and that the fish "are Commonly unsound and unwholesome. . . ." In 1768 the prohibition against oysters was again modified by a clause which permitted their sale, but declared that it was illegal to take them out of season from the banks and bay between New York City and the north side of Staten Island. Five years later, in 1773, the restrictions on oysters were further reduced by permitting their sale up to June 1. Presumably the regulations with respect to the fish market were identical with those of the other markets. but all that the Council Minutes show is an occasional appropriation for repairs or maintenance.27

Epidemic Diseases

One of the difficulties in determining the nature and extent of sickness and disease from historical records comes from the tendency to report only the unusual, Colds and other perennial respiratory complaints were always accepted as the normal course of events. In the colonial period, malaria and various enteritie disorders were also endemic, and, except when they became especially virulent, were scarcely noticed. Yet it is quite likely that, for the American colonies as a whole, malaria and the many forms of dysentery were the chief causes of morbidity and mortality. New York City was fortunate in that malaria never became endemic. A few cases appeared in the late seventeenth century, but the disease was not able to gain a permanent foothold. In 1748 Peter Kalm wrote that he had been told that "fever and ague," the common name for malaria, was ten times as prevalent in Pennsylvania as in New York. His New York informants, he added, "were of the opinion that it was occasioned by the vapors arising from stagnant fresh water, from marshes, and from rivers, for which reason those provinces situated on the sea shore could not be so much affected by it."28 Surprisingly, in light of the complaints about New York's water, there were not many complaints about dysentery or "flux." Hence the city managed to escape much of the endemic sickness of the day.

The major epidemic diseases, however, could not be kept at bay. The worst of these, smallpox, invaded New York regularly, often with disastrous results. In June of 1731, after an absence of thirteen years, smallpox appeared in New York City, struck sporadically for two months, and then quickly spread through the town. In typical fashion, the first public mention of the disease was an indignant statement by the Mayor and Aldermen denying that it constituted a threat. They declared that after having made strict inquiry they had been able to discover only two individuals infected with smallpox, both of whom "are almost well thereof, and out of Danger." The public could rest assured that all measures had been taken to prevent its dissemination. Following this statement, the newspapers fell discreetly silent until August 23 when they conceded that the infection was spreading.²⁹

Since colonial newspapers were always reluctant to admit the presence of a major contagious disorder, an admission such as the one on August 23 was always a good indication that an epidemic was well under way. In this instance, a Boston newspaper confirmed the worst, From New York a correspondent to the Boston Weekly News-Letter wrote on August 30: "Here is little or no News in this Place, nothing but the melancholy Scene of little Business, and less Money, The Markets begin to grow very thin; the Small-Pox raging very violently in Town, which in a great measure hinders the Country People from supplying this Place with Provisions." The disorder, he added, which had been relatively mild, "now begins to be of the confluent kind, and very mortal." By this time the New-York Gazette and the American Weekly Mercury were publishing a weekly summary of smallpox deaths. During September the death toll rose steadily, reached a peak during the first two weeks of October, and then fell off sharply. On November 15 the newspapers summarized the weekly bills of mortality and reported that 478 whites and 71 Negroes, or 540 persons in all, had died from smallpox.30

Since the population of New York was about 8,000 to 10,000, this means that within about three months from 5 to 8 per cent of the population was literally wiped out. The total number of deaths may have been considerably higher, since one report on September 27 asserted that the "Small-Pox, Fever and Flux prevails very much in this City, and many Children dye of said Distempers, as well as grown Persons." "Fluxes," the traditional summer diarrheas, regularly winnowed the ranks of infants, and often struck hard at the adult population. The term "Fever" is relatively meaningless, since fever is a normal accompaniment of nearly all disorders. In any case, the late summer and fall of 1731 were tragic for New York.

The epidemic of 1731 marked the first time that smallpox inoculation was used in the city. Inoculation, or variolation to give it its technical name, consisted of introducing pus from a smallpox sore into an abrasion on the skin of a healthy person. The usual method was to make a cut on the arm and insert the pus. This procedure, which seems to have been age-old in Africa and Asia, the probable hearth areas of smallpox, was introduced into England by the wife of the British ambassador to Turkey. Cotton Mather, a man of wide-ranging intellectual curiosity, read about variolation in the *Philosophical Transactions* of the Royal Society in 1718. He persuaded his friend, Dr. Zabdiel Boylston, to give it a try when smallpox struck in Boston in 1721. Despite a huc and cry against both Mather and Boylston, the practice gradually spread through the American colonies.³²

Variolation ordinarily brought on a mild case of smallpox, thus giving the recipient a lifetime immunity to the disease. There were drawbacks, however. Occasionally the inoculated person died from smallpox. The statistics on inoculation vary but the death rate ranged between 1 to 5 per 100. An even greater disadvantage was the ability of the inoculated individual to pass on a full-blown case of smallpox. Even though he himself might have only the mildest symptoms, the disease which he communicated could be extremely virulent. Much of the opposition to its use came from the certainty that once "inoculation was let loose," smallpox was sure to spread. Despite its disadvantages, as the colonial population grew and smallpox became a more frequent visitor, variolation became a general practice in the British colonies.

The initial trial of variolation in New York City was probably on a small scale, since there is little mention of it in the records. In January, 1732, however, a report from Jamaica, Long Island, stated that 160 persons had been inoculated. Only one fatality had occurred in this group, whereas one-half of all those naturally acquiring the disease had died.³³³

Seven years later smallpox returned to New York, possibly by way of inoculation. On October 23, 1738, the New-York Gazette carried an announcement by a merchant, Joseph Sacker, that he had hired a room some distance from his house for the purpose of inoculating those members of his family who had not had smallpox. He assured his customers that there was no danger of their getting the infection from his goods. Rather significantly, about two weeks later, one of the Boston newspapers reported that smallpox was becoming general in New York. In the middle of November the New York newspapers admitted its presence, adding that many people were turning to inoculation. In the following months only scattered references to the outbreak were made. By August the disease had almost run its course. On the twentieth of the month the Mayor announced that 1,550 persons had been infected and that only 16 active cases were still in the city.³⁴ Al-

though the disease may have been introduced from the outside, it seems likely that the resort to inoculation helped to keep the outbreak alive. The relative mildness of the disease may be attributed in part to inoculation, but it is also likely that the devastating outbreak of 1731 had drastically reduced the number of susceptibles left in the population.

Outbreaks again occurred in the winters of 1745–1747. William Livingston reassured Noah Wells in September of 1746 that "the small pox... are still in Town, but they are in so few families and so favourable, that the air is not in the least infected, and if you shun the houses in which they are, and avoid mingling with crowds, there is no danger of ... taking the Contagion." Inoculation again may have been responsible for perpetuating the infection. Governor Clinton in June of 1747 issued a proclamation strictly forbidding anyone "to inoculate for small pox any person or persons within the City and county of New York . . . ," explaining that he feared it would spread the disease.³⁵

Beginning in 1752, smallpox became a constant visitor in New York City. In the spring of this latter year the General Assembly was prorogued because of the danger from the disease. During the ensuing summer the infection slowly worked its way through the inhabitants. In October the authorities announced cheerfully: "We are assured, that there are now very few Families in this City, but what either have, or have had the Small-Pox; and that we have good Reason to hope the City will soon be clear of that Distemper." The city was not clear of the disease, however, until the following June, and even then the newspapers conceded that cases still existed in one family."

Beginning in 1756, smallpox broke out in New York City almost every year for a ten-year period. During these years the troop movements and other activities of the French and Indian War disseminated smallpox throughout the American colonies, and New York, like other major ports, could hardly expect to escape. The constant introduction of the disease led to the wider use of inoculation—which, in turn, contributed to keeping the infection alive. In reaction, New York, along with most of the other colonies, passed laws prohibiting variolation, but their enforcement was always difficult.³⁷

Although inoculation was a boon, there was ample justification, as noted earlier, for the laws against its indiscriminate use. The journal of a young man who came to New York City to be inoculated shows an appallingly casual approach to smallpox, one of the deadliest of diseases. He was inoculated on September 13, 1772, and smallpox pustules developed eight days later. The following day he was visited by some of his friends. A week later, feeling much better, he went touring the city. Shortly thereafter his smallpox scabs were washed with rum and he was released from the inoculation hospital.38 The total cost for the operation was \$4.00 for the doctor's bill and \$8.00 for board. The mildness of cases which often developed following inoculation was deceptive, and few of the patients could see the justification for isolation when they themselves did not feel particularly sick. While not all patients entertained their friends or toured the city during the process, it is certain that the restrictions upon those inoculated were honored largely in the breach.

By the end of the colonial period, smallpox had become much more common and at the same time seemed to have lost some of its virulence. It was no longer considered, as in earlier days, "the King of Terrors." Although this change in attitude toward it may have reflected a growing familiarity—one does not fear the familiar as much as the unknown—the case fatality rate among adults does seem to have dropped sharply in these latter years. The reduced losses among the adult population, however, may well have been counteracted by a higher infant death rate. In Europe, where smallpox was endemic, it was considered a children's disease. Rather significantly, Alexander Colden wrote on August 21, 1757, that smallpox was epidemic among the children in New York City, adding gloomily: "The Bells are ringing every day & five or Six Children buried of an Evenning." 39

When the colonies were young and settlements far apart, small-pox was only an occasional terrifying visitor. By the Revolution the population had increased to a point where smallpox could gain a permanent foothold, and in so doing, it began to follow the European pattern. An endemic disease which confers a lifetime immunity necessarily becomes a children's disorder. Eventually a high degree of resistance develops within the population, and the

symptoms tend to be mild. While smallpox was a childhood disease in Europe and there may have been some reduction in the case fatality rate, it still remained a major cause of death. Whether or not the disease would have gradually lost its virulence had it remained in Western Europe is difficult to say, for the advent of vaccination at the end of the eighteenth century cut short the normal progression.

In New York and the other colonies, the extensive use of variolation added another variable to the picture of smallpox. For all of its disadvantages, variolation did reduce the case fatality rate and conceivably may have attenuated the virus itself. While the evidence indicates that smallpox appeared in a milder form in the late colonial years, a detailed study of infant and child mortality, if it is possible, might show a different picture.

Vellow fever, which had struck with such devastating effect in 1702, appeared only once more in New York during the remaining colonial years. In the middle of July, 1743, the first cases appeared of an epidemic which lasted for approximately two months. Mayor John Cruger, who officially reported 217 burials from yellow fever, declared on October 22 that "the late Distemper" was now over. He did not mention the number of cases, although yellow fever ordinarily has a high case fatality rate. The chief significance of this outbreak is that it led Cadwallader Colden to write three essays on the causes and means for preventing epidemic fevers. Although a series of yellow fever epidemics swept the Atlantic Coast cities in the mid-eighteenth century, New York escaped further attacks until the closing years of the century.

Measles, which in colonial times was a major epidemic disease, swept through New York in the early months of 1729. A newspaper report at the end of February simply stated that many children had the measles, but that the disorder was relatively mild. A month later a correspondent wrote from New York that his family was greatly distressed by the disease. His wife, four of his children, and five of his Negroes were ill. After noting that nearly every family in town was affected, he added: "In all my days I never saw So generall a Sickness in a place not a greater mortality." Every day, he said, saw many burials. Subsequently he wrote that all of his family had recovered, but that he was afraid

he would lose one of his slaves. Fortunately, measles is milder than smallpox, and although it troubled New York periodically, it did not reappear in serious epidemic form.

In 1735 what was thought to be a new disease appeared in New Hampshire. Given several names but generally known as the "Throat Distemper," this disease gradually moved through the colonies in the succeeding years. The descriptions leave little doubt that it was diphtheria, but the outbreaks were complicated by a severe form of searlet fever which bore a close clinical resemblance to diphtheria. It was primarily a children's disease, but it proved incredibly fatal. In one New England town nearly all children were swept away, and wherever the disease struck there were families who lost every child.

New York City was fortunate in that the disease hit only lightly. The first attack came in 1745. A letter in one of the newspapers asserted in July that "there is now in Town a Fever which proves fatal to many Children. . . ." The symptoms, which included a skin rash and an ulcerated sore throat, leave little doubt that the "throat distemper" had reached New York. One New Yorker, whose two daughters fell sick, described the sickness as beginning with a sore throat and stiffness in the neck followed by high fever and delirium. Fortunately, his daughters both recovered—a recovery which he ascribed to the use of tar water, a favored panacea of the day.⁴²

The disease returned to New York in 1755 and again in the late 1760s. Its appearance in these latter years led Dr. Samuel Bard to write a paper entitled "The Angina Suffocativa, or Sore Throat Distemper, as it is commonly called by the inhabitants of the city and colony of New York." This is a disease, he wrote, "which has lately appeared among the children of this city, and which, both as an uncommon and highly dangerous distemper, well deserves an attentive consideration." In the family of William Waddell, one of the first to be affected, all seven children fell sick and three died. Bard said he felt certain that this was the same disorder which had been described by the well-known English physicians, John Huxham and John Fothergill. Bard was quite right. The "sore-throat distemper" appeared generally in Europe and its colonies in the mid-eighteenth century and then disappeared as a

pandemic for almost a century. Occasional minor outbreaks developed in New York City, but the disease did not again pose a major threat.

The ever-present colds and respiratory ailments were as common in the eighteenth century as they are now. Since they were a familiar complaint, colonial writers rarely spoke of them except to mention a particularly extensive outbreak. For example, in November of 1732 a short item in the *American Weekly Mercury*, datelined New York, stated: "People have in general been taken with Colds, which are mostly attended with a Feaver, and some with a Pain in the Side." Noah Webster, who wrote a history of epidemics in the colonies in 1799, listed a number of general influenza epidemics, but in comparison with the high case fatality rates of yellow fever, smallpox, and other major epidemic diseases, the respiratory infections seemed of minor importance.

Quarantine Regulations

Although the City of New York had established quarantine regulations in the seventeenth century, it was not until after the devastating smallpox epidemic of 1731 that the City Fathers took firm action to prevent the importation of disease. In June of 1738 news of smallpox and yellow fever in South Carolina and the West Indies led the Council to establish a quarantine anchorage off Bedlow's Island for all vessels coming from the infected ports. One of the local pilots was ordered to be "Constantly in waiting" off Sandy Hook to inform all ships to anchor off Bedlow's Island until cleared by the City Physician. Dr. Roeliff Kiersted was made official port physician, the first health officer appointed by the city, and Bedlow's Island apparently became the isolation center for infectious disease. The first evidence of this is a notation in the Council Minutes in 1742 that John Tenbrook was appointed "to take Care that no person Whatsoever: (Except by Order from the Mayor) go into the House or Houses Where any person has the Small Pox: or Come from any Such House to this City. . . . "45

The actions of the New York municipal authorities were usually supported by the provincial government. For example, early in 1744 Governor George Clinton issued a proclamation forbidding vessels to dock in New York City without first being visited

by a physician and securing a certificate of health. As smallpox became more prevalent during the French and Indian War, the Provincial Council passed an act in 1755 "to prevent infectious Distempers being brought into this Colony, and to hinder the spreading thereof." Among the new provisions was one providing for the Governor to appoint a health officer and for the erection of a pesthouse. In compliance with this, the City Council appointed special committees in 1757 and 1758 to investigate various sites. Since Bedlow's Island had served well, a decision was made to purchase it from the owner, Archibald Kennedy, for the sum of £1,000. Construction got under way in 1759 and was completed in 1760. 16

The pesthouse on Bedlow's Island cannot be classified as a hospital, since it was generally recognized that little could be done for smallpox victims save good nursing. Nor was the pesthouse designed to facilitate medical care—its sole purpose was to prevent the disease from spreading. That the intent was purely custodial is indicated in the appointment of caretakers for the Island. As soon as the building was completed, the Council leased Bedlow's Island to Isaac Will for one year. The terms of the lease stated that he was obliged "to Continue on said Island During the Continuance of the Lease in Case any Sick shall be Lodged there and Afford them his & his familys assistance. . . ." Four years later the Council left no doubt about the pesthouse being custodial when it named John Brown, a "city Labourer," as "Overseer and Manager of Bedlow's Island. . . ."⁴⁷

When Mayor John Cruger of New York heard that British troops were scheduled to arrive in New York in the early summer of 1762 from the West Indies where "raging fevers" had been reported, he hurrically wrote to Lt. Governor Colden informing him of the quarantine facilities at Bedlow's Island. Colden, in turn, notified Sir Jeffrey Amherst that the Island contained a pesthouse consisting of four rooms, each 20 feet square, for the reception of the sick. He added that colonial laws required all ships to undergo a health inspection at the Island before being cleared for landing. Amherst discounted the reports of fever in the West Indies but agreed to abide by the quarantine laws. 48 For the rest of the colonial period the officials strictly enforced the quar-

antine regulations. While other factors played a part, the quarantine undoubtedly contributed to keeping New York City free from the major epidemic diseases during these years.

The State of Medicine

The medical profession in eighteenth-century New York was scarcely entitled to be called a profession. Medicine was practiced by a variety of individuals, some of whom held degrees from the most reputable European schools, while many others had simply appropriated the title of doctor. Between these extremes were the majority of physicians, few of whom held formal degrees but most of whom had been given some sort of apprenticeship training. The average practitioner, insofar as he was aware of a medical theory, held a vague humoral concept in which the aim of therapy was to restore body elements to their natural balance. The better-informed physicians were probably acquainted with the new theories of the late seventeenth and eighteenth centuries -those, for example, such as the iatro-physical and iatro-chemical, which sought to explain human physiology in terms of physical and chemical laws-but the practice of all medical men was essentially depletory. Bleeding, purging, vomiting, sweating, and blistering were the order of the day. The rigorousness of the treatment varied from physician to physician, but few dared to question these tried and true methods. Moreover, the public, accustomed to strenuous medicine, looked askance at any doctor who failed to do battle with the sickness. Just as today's patient feels that his money is wasted unless his doctor prescribes an antibiotic or some other miracle drug, the eighteenth-century patient expected to be bled and purged. He was not to be disappointed.

A 1720 prescription for a patient suffering from rheumatism clearly illustrates the rigorousness of medical treatment. The patient was first to be given two purges, one in the morning before breakfast and the other at night. The next day he was to have 12 to 14 ounces of blood let, preferably from the foot. A day or two later, "as you find his Strength will bear It," he was to be purged twice more. The prescription concluded: "On those Days he doth not Purge, and Bleed, Give one of the powders In the morning and another In the Evening, mixt In some Diet Drink made with Equal Parts of Horse Redish Roots, and Bark of Elder

Roots, Pine Budds, or the Second Bark, wood or Toad Sorrel, make it strong with the Ingredient."⁴⁹ It is doubtful that a permanent cure was effected, but certainly the treatment must have made the pains from rheumatism seem insignificant.

Colonial records abound with complaints of patients dying from the effects of excessive purging and vomiting. A notice in a New York newspaper in 1733 reported the case of a woman who, after her physician gave her "a portion of Physick, . . . fell to vomiting" until her death two days later. The almost unlimited faith in the capacity of the human stomach to withstand the most nauseating mixtures is shown in the treatment accorded an habitual drunkard. The account states that the prisoner "underwent the Usual Discipline of the House for such Offences, viz. a plentiful Dose of Warm Water and Salt to operate as an Emetic, and of Lamp Oyl as a Purge, in Proportion to the Constitution of the Patient." In consequence, he was forced to swallow "3 Quarts of one, and 21/2 Spoonfulls of the other; (Also a Jill of New England Rum) which operated very powerfully, attended with a violent sickness, which obliged him to lye down." He died several hours later. The Coroner's Inquest attributed the death to excessive drinking and the effects of the medicine, but ruled that the jailer was "innocent of his death."50

Although the legitimate colonial doctors, like their European counterparts, were the subject of occasional bitter satire, in New York the chief criticism was levied against quacks and ignorant practitioners of medicine. Many of the harshest condemnations came from qualified physicians who found their position undermined by charlatans and other claimants to the title of doctor. Dr. Cadwallader Colden, who turned from medicine to governmental service, was especially bitter about the condition of his original profession. Writing to Governor Hunter in 1720, he contrasted the advances in astronomy with the backwardness of medicine, and attributed the success of the former to its ability to attract intelligent and wealthy men and to gain public support. Medicine, on the other hand, Colden declared, had appealed to ignorant men motivated by "The Hopes of sordid Gain" and had neither public nor private support. For these reasons, he wrote, "the Art is become in many places Contemptible & curious learned men have been deterr'd from enquiring into this Science. . . ."

There could be no hope for the improvement of medicine, he concluded, "without the Assistance of our Rulers & Governors. . . . "51

In response to a recommendation from Colonel Barré on behalf of a physician who proposed giving anatomical lectures in New York, John Watts wrote that even though the doctor was "a Professor of that black Art, in hopes that he may be an exception to the general Rule, we will receive him into our Bosoms. . . ." He doubted that the doctor could find medical students, adding "besides we have so many of the Faculty allready destroying his Majestys good Subjects, that in the humour people are, they had rather One half were hangd that are allready practicing, than breed up a New Swarm in addition to the old. . . ."⁵²

In 1767 Dr. Peter Middleton blamed the public for the low state of medicine. Even men of good sense, he asserted, resort to nostrums and quacks instead of calling upon qualified medical men. "Such being the state of physic here," he continued, "what wonder is it that this city should be pestered in so remarkable a manner with the needy outcasts of other places, in the character of doctors; or that this profession of all others, should be the receptacle and resource for the refuse of every other trade and employment?" ⁵³

While the public might deride the profession in general, individual doctors were often held in high regard. Cadwallader Colden, of course, was one of the most respected men in the colony, but his status was derived largely from his high government offices. A good clue to the public attitude toward individual practitioners can be found in the newspaper obituaries. Relative to the death of John Dupuy, "M.D. and Man Midwife," who died in 1745, the Weekly Post-Boy declared "it may truly be said here, as David of Goliath's Sword, There is none like him." The obituary of Dr. Roelof Kierstede (or Roeliff Kiersted) expressed both a genuine feeling of loss for Dr. Kierstede and at the same time a general suspicion of orthodox medicine: "Friday last died here much lamented, DR, ROELOF KIERSTEDE, A Gentleman eminent in his Profession, altho' not skill'd in the technical Terms thereof, which often drew on him the Contempt of his Brethren; yet his great Knowledge in Simples, his extensive Charity and successful Cures to poor People, has made his Memory precious to them, and his death a real public loss." Commenting upon a news story

which stated that Boston had 24 physicians, a New York newspaper expressed pride in the city's physicians: "Have we not Reason to rejoice that whilst we are not above one Third as numerous as Boston; we have, on a moderate Computation as theirs, upwards of Thirty Practitioners of Physick amongst us?" The doctors, with good reason, might complain of the quacks, and laymen occasionally might express doubt about the pretensions of the medical profession, but on the whole the people seem to have been satisfied with their medical care.

Three developments in the mid-eighteenth century helped to raise the level of medical practice. The first of these was the establishment in 1749 of a medical society, known as the "Weekly Society of Gentlemen in New York." James J. Walsh, the medical historian of New York, believed that this group met regularly until 1794, when it was replaced by a new association, the "Medical Society of the State of New York." Although the medical society represented only a small part of the practicing physicians, its members were influential. By securing a licensure law and organizing the first medical school in New York, they played a key role in furthering the two other steps which helped to give medicine a professional status.

The first serious agitation for a medical licensure law began in the Independent Reflector in May of 1753. A letter to the editor stressed the need for regulating medicine in order to prevent "the dismal havock made by quacks and pretenders." With the backing of Cadwallader Colden, at that time a member of the Governor's Council, and prominent physicians, the Provincial Assembly in 1760 passed the first medical licensure law. It was aimed, according to the Preface, at the "many ignorant and unskilful persons in Physic and Surgery." The provisions of the law required that henceforth all individuals wishing to practice medicine must first be examined by a committee of three selected from the Governor's Council, Judges of the Supreme Court, the Attorney General, and the Mayor and Recorder of New York City. In examining candidates, the officials were expected to call "to their aid . . . such proper person or persons as discretion deemed fit," by which the lawmakers undoubtedly meant reputable physicians. 56 Anyone practicing without a license was to be subject to a fine of five pounds for each offense. As with most licensure laws, those individuals already in practice were exempt from the provisions. While the act established the principle that medical practice was a matter of public concern, it did little to reduce the number of quacks and charlatans. Judging from the newspapers and the indignant outcries from respectable physicians, the number of irregular practitioners increased during the next thirty-odd years. Significantly, no evidence has been found of any convictions for failure to secure a license.

The third, and possibly most important development in New York medicine, was the establishment of a medical school in 1768. Drs. John Bard and Peter Middleton had given lectures in anatomy sometime around the mid-eighteenth century, and in 1763 Dr. Samuel Clossy offered a formal course in the subject at King's College (Columbia). It was not until 1767 that a serious attempt was made to get a medical school under way, and not until the following year that Dr. Peter Middleton in collaboration with Dr. Samuel Bard, the son of his old colleague, Dr. John Bard, succeeded in organizing one at King's College.⁵⁷ The school prospered until the beginning of the Revolution but barely managed to survive the vicissitudes of the war years.

The same physicians who supported medical education were also active in trying to establish a hospital. In the first Commencement address Dr. Samuel Bard declared that members of the profession had organized themselves for the purpose of promoting an institution for the sick. Such an institution, he stated, would serve charity and at the same time be an asset to professional training.58 Backed by the medical society and the medical school professors, in 1770, under the leadership of Drs. Samuel Bard, Peter Middleton, and John Jones, a hospital association was organized. The group received a charter on June 13, 1771, under the name, "The Society of the Hospital in the city of New-York, in America." This same year the city gave a plot of land to the Hospital Society. When the Society decided upon another site in 1772, the city repossessed the land and granted the sum of £1,000 in its place. In the meantime, Bard and his colleagues had procured financial backing through appropriations from the Provincial Legislature and the City Council, as well as private contributions from Great Britain and the colonies. With these funds in hand, it was possible to start construction in 1773.

In February of 1775, as the building was nearing completion, it was virtually destroyed by fire. The Legislature quickly appropriated an additional £4,000 and the founders started anew. The fire, however, was only the first of a series of misfortunes. Before the hospital could be rebuilt, war intervened, and the British used the building as a barracks. Other problems arose in the postwar years, and it was 1791 before the New York Hospital officially opened.⁵⁹

The Sick Poor

As the food regulations have shown, there was a real and sincere interest in the welfare of what was termed the "deserving poor." This concern resulted in part from the size of New York City during the colonial period. A town of 10,000 to 20,000 people could scarcely hide its poor in a ghetto—the impersonality of the teeming cities of today was a later development. The awareness of social conditions on the part of New York City officials is shown by a petition to the Governor in 1748 pointing out that the wartime demands for food had raised prices "to the very great Oppression and Loss of all Degrees of People, but more especially to the industrious and laborious Poor amongst us." The petition then requested the Governor to forbid the export of food for as long as was necessary.⁶⁰

While charity was considered a private responsibility, resting in the hands of the churches and individuals, the city built an almshouse in 1736, and it continued the medical care it had provided in the late seventeenth century. In the years from 1754 to 1773 the Common Council frequently voted payments to physicians for their services to the poor. Dr. Beekman Van Bueren, who served as prison physician, was paid over £27 in 1770 "for his attendance & administring of medecines to sundry poor objects in the Bridewell," and another £22 "for attending and administring of medecines to sundry poor debtors in the New Gaol. . . . "⁶¹

Dr. John Bard seems to have performed a wider range of services. In 1755 he received 40 shillings "for Visiting Sundry Sick palatines in this City. . . ." The "palatines" were German immigrants from the Rhineland. Even under the best of circumstances, the long journey across the Atlantic was a difficult and perilous one, lasting anywhere from four to sixteen weeks. The immigrants

were usually packed into crowded sailing vessels whose captains and owners, eager to make every penny possible, cut food and water to an absolute minimum. If the vessel was delayed by adverse winds, the situation frequently became desperate. To add to the passengers' troubles, typhus, one of whose names was "ship fever," smallpox, and a variety of enteritic disorders invariably broke out among them.

Colonial records are replete with grim accounts of harrowing experiences endured by newcomers to America. The sufferings reported by the passengers of the Brig "Naney" from the Scottish highlands in 1774 were by no means unique. During a passage which took sixteen weeks, 80 of the 280 passengers died. Although the passengers had been promised one pound of meal per day and a half-pound of meat per week, the captain provided only six barrels of beef for the whole voyage. The water was bad "and occasioned a violent dysentery." Adding insult to injury, passengers were charged sixpence for the privilege of throwing dead bodies overboard. (62)

While the Germans and Scots were the chief sufferers in the eighteenth century, their experiences were repeated by each successive wave of immigrants. Throughout the colonial period it was recognized that newcomers were peculiarly susceptible to local disorders, and that the first two or three years were usually crucial in terms of survival. When one considers that the newcomers usually arrived half starved, half sick, and often barely alive, the surprising fact is that so many survived. Even those who had enough to eat almost invariably suffered from dietetic deficiencies. Cadwallader Colden blamed the loss of teeth among children of immigrants from Europe upon "the Scurvy, of which scarce one family in this Country is free." Most people acquired scurvy on the ships, he wrote, where it was generally epidemic due to "little fresh Provision or Sallad so that they were obliged to feed on salt meat allmost the whole year."63 Colden, a perceptive individual, recognized what many intelligent men had observed long before his day-that scurvy was a dietetic ailment which could be prevented or cured by fresh fruits and vegetables. Yet scurvy remained a serious health problem down to the end of the nineteenth century, especially plaguing armies and navies, since corruption and inefficiency characterized most military and naval organizations.

In addition to caring for sick immigrants, Dr. Bard was occasionally called upon to prescribe for smallpox cases among the poor. In dealing with smallpox cases, the Council may have been motivated by self-interest, that is, the wish to avoid an epidemic. While this thought may have been present, the Council demonstrated too clear a sense of social responsibility on other occasions for this to have been the sole motivation. For example, in 1762 Dr. Bard was paid seven pounds "for Delivering a Woman in the poor House and Attendance in her Recovery &c." A few years later the city paid Surgeon Benjamin Y. Prime five pounds for "having trepanned the fractured skull &c. of a poor Woman who was a real object of Charity."⁶⁴

Viewed from the present, social conditions in eighteenth-century New York present some odd contrasts. Debtors were thrown into jail and were expected to provide themselves with food and medical care. Since the occasion for their being put in jail ordinarily indicated a complete lack of financial resources, their condition often became desperate, and churches and other charitable groups repeatedly asked for contributions on their behalf, Executed criminals were usually left hanging in chains as a warning to other miscreants. In 1769 a newspaper reported that an accused murderer who had hung himself in jail was buried in the highway with a stake driven through his body. The inscription placed over his grave warned each passerby to "Ponder on his Conduct, and learn from his melancholy Example, to fly the first Approaches of those Vices, which may lead you to a like unhappy End."65 With a large number of Negro slaves in New York, the fear of a slave uprising was always present. Slaves who rebelled or were thought to be involved in a projected rebellion were burned alive. This same sentence applied to any Negro who murdered or assaulted a white person.

On the other hand, there was, as noted earlier, a sympathy for the poor which found expression in both private and public charity. The poorhouse was no bed of roses, but at least it provided a haven for the destitute. Widows and orphans were usually taken care of in one way or another. When private charity was inadequate, the public purse was opened. While the quarantine laws were designed for public protection, they also helped to identify ships with sick passengers and crews and this led to the sick receiving medical help. Isolation of smallpox and infectious disease cases necessitated providing nursing or medical care for those too poor to afford their own physicians. The size of New York in the colonial period made it possible for relatively close personal relationships to be maintained. The poor were individuals rather than a faceless multitude. Under these circumstances, the victims of poverty, whether their state resulted from sickness, accident, or economic depression, usually received help.

Notes to Chapter 3

- Stokes, Iconography, I, 193, IV, 518; Per Kalm, Travels into North America, John Reinhold Forster, trans. (London, 1770-1), 1, 249-50; Carl Bridenbaugh, ed., Gentleman's Progress, The Itinerarium of Dr. Alexander Hamilton, 1744 (Chapel Hill, N.C., 1948), 44; David T. Valentine, History of the City of New York (New York, 1853), 297.
- Newton D. Mereness, ed., Travels in the American Colonies (New York, 1916), 414.
- 3. M.C.C., 1675-1776, IV, 101-04.
- 4. Ibid., V, 112.
- 5. Ibid., IV, 177-78, 465-67; Stokes, Iconography, IV, 530.
- 6. The Medical Repository, 3rd hexade, II (1811), 1-9, 159-62.
- 7. Ibid., 162.
- 8. Ibid., 163.
- Stokes, Iconography, IV, 577; James Alexander to Cadwallader Colden, January 22, 1744, in The Letters and Papers of Cadwallader Colden, III, 1743-47, N.-Y. Hist. Soc. Colls., 1919, LII (New York, 1920), 46 (hereinafter cited as Colden Papers).
- 10. Stokes, Iconography, IV, 579.
- 11. M.C.C., 1675-1776, V, 111-14.
- 12. Ibid., 118-21.
- 13. Colden Papers, III, 95-96.
- 14. M.C.C., 1675 1776, V, 145-46, 343 44, 369.
- New-York Gazette, April 17, 1749; "New York" will henceforth be eliminated from newspaper citations.
- 16. M.C.C., 1675 1776, VI, 258-59; Stokes, Iconography, IV, 830, 851.
- M.C.C., 1675-1776, III, 407-08; for example, see Gazette, December 9, 1751, November 6, 1752; Stokes, Iconography, IV, 636.
- 18. Gazette, November 2-9, 1730, November 26, 1770; M.C.C., 1675-1776, V, 120, VI, 230, VII, 246.
- 19. Bridenbaugh, ed., Gentleman's Progress, 88; Kalm, Travels into North America, 1, 252.

- 20. Stokes, Iconography, IV, 645; M.C.C., 1675-1776, V, 386.
- 21. Stokes, Iconography, IV, 645; M.C.C., 1675-1776, V, 386, VI, 268.
- 22. Wegmann, Water-Supply, 4; M.C.C., 1675-1776, VIII, 26-27, 40-41, 43, 47-48, 62-63, 100, 121, 131.
- 23. For an example, see Gozette, May 6-13, 1728, June 28, 1773.
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4

Revolution and Reconstruction

The years of growth and prosperity for New York City came to an abrupt halt late in the summer of 1776 with the British occupation. Even before this time, the gathering of the Revolutionary Army in and around the city had disrupted normal activities. As the British Army threatened, thousands of Americans fled their homes, reducing the population by almost half. In the eighteenth century armies normally lived off the countryside, and to professional soldiers it made little difference whether they were in friendly or enemy territory. To make matters worse, the bitterness between the Tories and Patriots had already led to a substantial destruction of property. The British occupation resulted in further looting and the confiscation of Patriot homes. In addition, public buildings were appropriated for the Army's use. For example, the recently reconstructed New York Hospital was taken over as an army barracks and the Medical School of King's College (later, Columbia) became a hospital. Two disastrous fires, one in 1776 and another in 1778, destroyed certain areas in the city, and the military authorities, preoccupied with more pressing concerns, had little interest in either rebuilding these sections or in maintaining the streets and public buildings. Thus for almost seven years New York steadily deteriorated.

The departure of thousands of Patriots formed a vacuum which was soon filled by the British Army and by Tory refugees from areas under American control. Housing shortages quickly developed and tents and shacks blossomed in the fire devastated areas. With the municipal government no longer in existence, the military took command. In general, the Army followed a policy of attempting to maintain or recreate the services of the former municipal government, but in the turmoil and confusion of the

war, these efforts were necessarily limited. In December of 1776 the British Commandant appointed a vestry consisting of 19 citizens to look after the poor. Subsequently he added the Mayor and Overseer of the Poor to the group, and authorized it to collect rents from confiscated Patriot property and receive certain fines and license fees. The vestry was gradually given more responsibility until it had assumed most of the duties formerly handled by the Common Council. Street cleaning and maintenance, city wells, ferries, and fire engines were all brought under its purview.

In previous colonial wars the mobilization and movement of troops had signalized the outbreak of smallpox and other communicable diseases, but New York City was fortunate during the Revolutionary War. In the case of smallpox, a widespread resort to inoculation probably helped to prevent major epidemics. The brisk trade carried on with the West Indies might well have brought a recurrence of the earlier vellow fever attacks, but here again, New York escaped. A hint of what may have been yellow fever can be found in General William Howe's orders for November of 1776. According to one of them, it had been reported to the Commander-in-Chief "that a Pestilential Infection is much to be apprehended. . . . " In consequence, the General had ordered all graves to be dug deeper and the apartments of the sick to be washed with vinegar and properly aired.2 Although these precautionary measures could have had little effect, the danger apparently passed.

In the fall of 1779 a fever of some sort broke out among the British troops, but its precise nature is uncertain. One observer commented that intermittent fever was prevalent both in the country and in the city, adding, however, that it was not mortal.³ While malaria was never a serious threat to New York City, occasional cases did develop and the disorder might have spread among the unacclimated troops. A more likely threat to the soldiers was typhus. This disease, which was given many names—gaol, ship, hospital, military, or eruptive fever—because of its tendency to occur wherever men were crowded together, periodically swept through the troop ships and army barracks. Fortunately, it never affected the population at large. According to Noah Webster, influenza was widespread in the colonies in 1781 and measles in 1783, although New York City seems to have been

relatively unaffected by the outbreaks. In the summer of 1781 the city was troubled by a "malignant fever," but, here again, only a few people were involved.⁴

Although public buildings were not properly maintained, some services had to be provided. A newspaper notice in the summer of 1779 requested bids from contractors for cleaning the streets. The successful bidders were to be given "an exclusive right to take all the manure and rubbish for their own use" and were requested to suggest any regulations or restrictions they felt necessary. The perennial problem arising from the accumulation of garbage, refuse, and night soil in streets, vacant lots, and on the docks was handled directly by the military officials. In the spring of 1780 Major General Pattison issued a proclamation prohibiting citizens from so disposing of their wastes and ordering all inhabitants to carry away such material at their own expense. In accordance with traditional practice, he further directed that they sweep the streets in front of their houses and pile the dirt for the cartmen to carry away.⁵

The following year Brigadier-General Samuel Birch issued a more detailed set of sanitary instructions. No garbage or rubbish could be piled in the streets except on the day assigned for the cartmen to pick it up. No tubs or vessels filled with any type of liquid were to be thrown into the streets. The cleaning of fish and meat in the public thoroughfares or under the public pumps was forbidden. The last provision required all landlords to build "necessary houses." In the event they failed to do so, tenants were instructed to have the privies built and to deduct the cost from their rent. With a drastic housing shortage, many greedy individuals undoubtedly sought quick profit by erecting shoddy structures lacking any of the normal conveniences.

As noted earlier, Christopher Colles' water works project could scarcely have been completed at a worse time. On March 4, 1776, Colles announced that his well, steam pump, and reservoir were ready. The pump was capable of lifting 17,400 gallons of water an hour into the reservoir, and Colles kept it in operation for several days during the following week "greatly to the Satisfaction of vast Numbers of People who went to see it." In the meantime, the city had contracted for hollowed logs to carry the water through the streets. Before the system could become fully opera-

tional, military exigencies closed it down. The last reference in the minutes of the Common Council to the water system came on May 24 when the Council ordered payment of six pounds to Colles for supervising the water works for one month and another twelve pounds to a Mr. Hornblower for inspecting and reporting on the water system. Shortly afterward the Council adjourned for the duration of the conflict and the water works project was abandoned.

For the next twenty-five years or so the city continued to depend upon the "Fea Water Pump" for drinking purposes. Even this source, however, was becoming polluted by the time of the Revolution. The spring was situated fairly close to the Collect or Fresh Water Pond and undoubtedly drew at least some of its water from this source. As the city pushed north, it became necessary to forbid the use of the Collect as a dumping ground. As early as 1778 Major General Valentine Jones, the commandant of New York, issued a public notice declaring it illegal "to wash cloathing of any kind in the Fresh Water Pond, or heave filth, earbage [sic], or dirt, in or near the same." Other than palliative measures such as this, however, no real effort was made to solve the city's water problem at this time.

Probably because the events of the war overshadowed all other matters there is not much information respecting New York's public health during the Revolutionary years, although the military authorities apparently enforced most of the colonial laws. Among the regulations which the British Army considered essential were the bread laws. In 1780 the Commandant's Office issued new regulations, ordering that loaves made of first quality bread were to be baked into long loaves weighing two pounds each; that bread made with good but inferior quality flour was to be baked into round loaves weighing two and a half pounds; and that the bread inspector was authorized to seize all bread not meeting specifications.¹⁰

Meanwhile, the civilian population attempted to carry on as many normal activities as possible, but these efforts, too, were necessarily limited. The local medical society, although its ranks were sadly diminished, managed to hold occasional meetings. The medical school had to close its doors, but in 1777 Dr. Samuel

Clossy gave a series of lectures on surgery and pharmacology.¹¹ Even the poor were not forgotten during these hectic days. On Christmas of 1777 a notice in the *Gazette* stated that "40 poor Widows, Housekeepers having Families in this City, will receive 40 lb. of fresh Beef, with a half Peck loaf each. . . ." A charity school which "annually cloathed and instructed in the Principles of the Christian Religion" almost a hundred orphans and children of indigent parents also managed to survive the strains of this tumultuous period.¹²

The early optimistic hopes of the Tories for a quick victory gradually withered as the war dragged on, and the defeat of Cornwallis at Yorktown must have heightened the unrest in New York City. The subsequent withdrawal of British forces brought a second mass evacuation of New York as thousands of Loyalists elected to seek a new life in England and the British colonies. Once again the population was reduced to about half its prewar number. Temporarily the Continental Army took control of the city until a new Common Council could be elected. Early in 1784 the municipal government was reestablished and the slow work of reconstruction got under way.

The Postwar Years

Although some of the fire-blackened ruins of the war years still remained when Washington was inaugurated in 1789, the intervening period had been a highly prosperous one for the city. The population, which had been cut to about 12,000 following the British evacuation, jumped to 23,614 by 1786. Within another four years it had increased to over 33,000, making New York the largest city in the United States. Prosperity was no handicap to reconstruction, but the rapidity with which the population increased presented almost insurmountable difficulties to the newly reorganized city government. Even under ordinary circumstances it would have been difficult for an administration accustomed to dealing with the problems of a relatively small town to be suddenly confronted with the sanitary and health needs of an urban area. To make matters worse, in 1784 New York was still bearing the scars of two disastrous fires and eight years of wartime attrition. Thus the civic officials had to struggle with the problems they had inherited from the war, as well as face up to the newer and more complex ones arising from an ever-expanding population.

Public Sanitation

When the Common Council met early in 1784 to assume its former responsibilities, the members proceeded to reenact the municipal ordinances of the prewar years. One of the first of these, "A Law for the speedy & effectual cleansing of the City," assigned the responsibility for keeping the city clean to three street commissioners. Following the usual practice, citizens were expected to sweep the dirt into piles in front of their homes or businesses, and the cartmen were to haul it away once a week. In April, taking cognizance of the filthy condition of many vacant lots, the Council ordered that where the lot owners could not afford to pay for hauling away the dirt and filth, the work should be done at city expense. A month later the Council took up the perennial matter of dirt and rubbish accumulating in the slips, and instructed that the one near the Fly Market be filled up save for a drain or ditch to carry away the filth from the market.¹³

By 1785 it had become apparent that the cartmen were not fulfilling their obligation to remove the street dirt. In April the Council employed two seavengers at £150 each to perform this task. As had been the case formerly, the citizens were still responsible for piling the dirt into heaps on specified days of the week. The new system worked no better than the old, and the following year the Council increased the number of scavengers. This latter action proved no solution either. In February of 1787 the Council ordered that able-bodied vagrants confined in the jail "be employed to collect the Street Dirt & spread it on the Commons in front of the Alms House to manure the Ground. . . . " Since the garbage and offal from the streets did make good manure, the Council decided a few months later to permit any individual, even though not a licensed cartman, to haul away the street dirt. In the meantime, a special committee of the Council was at work under instructions to report upon the best means for keeping the streets clean. Either the committee found no answer or else its findings were dismissed, for a grand jury, which finished its work

early in 1788, indicted the city for the "dirty appearance of the Streets," and described many of them as impassable. 14

Subsequently a second committee was appointed, but all that resulted was the enactment of another ordinance reiterating essentially the same provisions to be found in the preceding laws. The major change was to place responsibility for removing dirt upon the householders. Those neglecting this obligation were to be fined. Although the existing laws already forbade anyone throwing garbage and offal into the streets, a clause in the new ordinance specifically prohibited butchers from such action. Despite all these efforts, six months later still another committee was appointed to draw up "a more effectual Law for Keeping clean the Streets of this City."15 The difficulty, however, did not lie in the ordinances themselves but rather in the lack of enforcement. The existing laws were specific enough, but the municipal government was not strong enough to enforce them, and the public preferred to continue its old practice of using the streets, alleys, and vacant lots as dumping grounds.

Recognizing where the difficulty lay, in 1789 the Common Council made James Culbertson, the high constable, responsible for superintending street cleaning, and particularly enjoined him to prosecute all who violated the laws. Special efforts were made to publicize the sanitary ordinances and to educate the public, and during Culbertson's term of office, 1789 to 1794, considerable progress was made. How much of the credit goes to Culbertson is not easy to say, since a grand jury in November of 1792 criticized him "for his indulgence or neglect in compelling the Inhabitants to clean the Streets." The Council responded to the grand jury's report by ordering that the street-cleaning ordinance be republished and that the high constable and all other officials "cause the Law to be rigorously executed." 16

The new spirit which seems to have infused the civic authorities in the early 1790s was shown by their determined assaults upon other longstanding evils. As early as September of 1784 certain residents in the Out Ward had complained about the stagnant water in an area known as "the Meadows," a marshy section extending from the Collect to the Hudson River. The Council appointed a series of committees to deal with this issue, but all of

them foundered on the question of who was to pay for filling in the land. After eight years of wrangling, a state law in 1792 finally compelled the property owners to foot the bill and thus solved what had been described as "a great Nuisance" which did "very much endanger the Health of the Inhabitants..."¹⁷

As part of the program to improve street sanitation, in 1791 the Council ordered the paving of Broad Street. Up to this time, most of the streets had a drain or open sewer (it was usually called a "Kennel") running down the middle. The word "sewer" which was commonly used in the colonial period was a misnomer since the drains were designed primarily to remove surface water; however, garbage and a good deal of other matter usually found its way into the drains. In this year it was proposed to build drains or gutters on each side of the street rather than one in the middle. The Council also looked into complaints that many residents had dug private sewers or drains leading into the Broad Street kennel. The practice was perfectly legitimate so long as the gutters were designed to drain cellars, but many people, the Council noted, were using them to remove "the filthy & dirty Water from their Yards & Kitchens. . . . " An order in 1703 called for the inspection of all private drains and the elimination of those used for purposes other than draining cellars. 18 Theoretically all privies were to be emptied by hand labor, but undoubtedly many simply overflowed, with the excess sewage either sinking into the soil or else finding its way into the public drains.

The perennial complaint about the foulness of the slips was also given serious consideration. The efforts to clean the public drains or sewers were aimed in part at this difficulty, since the sewers emptied into the slips. A second major cause for the pollution of the slips came from the common practice of simply throwing or emptying much of the city's wastes from the nearest dock. In 1791 citizens were warned about this matter, and the wharfinger and other officers were ordered to see that the law prohibiting it was strictly enforced. The foul condition of the slips was made even worse by the fact that they literally became filled up. So much silt, garbage, and other refuse poured into them that at low tide the so-called "nastiness" of the town was exposed to the air. Aside from the esthetic factor and the fear of miasma, the slips

could no longer provide dockage for shipping. Having seen a new dredging machine in operation, in 1791, the street committee recommended that the Council buy this "Dock Drudge." The new dredge did improve matters temporarily, but refuse from the mounting population of New York continued to pollute the docks and slips for many years.²⁰

Water Supply

When the municipal government was reestablished after the war, all that was left of Christopher Colles' water works was the well and pump, the remains of the reservoir, and the distributing system of pine logs. Neither Colles nor the contractor who supplied the pipes had been paid. Pressed for funds, Colles finally agreed to settle his claims for £ 150 in 1788; the other contractor was not paid until 1800. Beginning in 1785, a whole series of proposals for establishing a water system were made to the Common Council, but nothing came of them. Samuel Ogden petitioned for a franchise in 1785, and Robert Livingston requested permission in January of 1786. In the spring of this year the aldermen and assistants, who had been requested to sound out their constituents on the subject, reported that the majority favored a municipal water system rather than giving the contract to private individuals. The tea water men favored municipal ownership. A water system, they wrote in a letter to one of the newspapers, would cause them to lose their jobs, and, they implied, throw them into the poorhouse. Noting that the project would quickly pay for itself and bring a high return on the original investment, they cheerfully urged the city to underwrite it, arguing with tongue in cheek that the annual income would "support all the poor in the poorhouse!"21

In 1788 a group of inhabitants peritioned the Common Council requesting that either Christopher Colles' project be revived or that some other plan be initiated for providing the city with water. The petitioners stated that they would be willing to be taxed for this purpose, provided the average annual tax did not exceed 26 shillings per house. By 1790 there seems to have been general agreement as to the need for a water system, but no unanimity as to how to bring it about. Much of the agitation revolved around whether or not the system should be private or publicly owned,

but there was almost as much debate over the source of the water, with the "Tea Water Pump," the Fresh Water Pond or Collect, and the Bronx River all having their supporters.

While the arguments raged, the people continued to depend upon the old system of wells. The rapid expansion of the city placed a great strain on the limited water supplies and, at the same time, as residences encroached upon the Collect and other water sources, led to further pollution of existing wells. One of the first tasks of the Common Council in 1784 was to see that the public wells were cleaned and put in good condition. The following year the Council began the practice of letting out an annual contract for this purpose. The first contractor, William Smith, agreed to perform the work for 140 annually. The following year he lost out when another bidder offered to do the job for £120. When the well contractors were negligent—not an infrequent occurrence -- the Council would instruct the aldermen and assistants to have the work done. Trying to strengthen the city's control over the contractors, the State Legislature in 1787 authorized the municipal officials to appoint an overseer of pumps for each ward. Next, the city in 1702 took a cautious step toward subsidizing the water supply by agreeing to contribute one dollar per foot toward digging new wells, provided these wells met specified standards.23

While the city was struggling to improve the wells, an even worse problem was the increasing contamination of the ground and surface water. The Tea Water Pump, which was the main source of drinking water, was situated quite close to the Collect and drew much of its water from this pond. In 1784 and 1785 newspaper writers protested the deplorable conditions along the shores of the Collect. One asserted that the common pump water was now better than the tea water. "The reason," he declared, "is very obvious-let any one view the pond, which is the spring and source of that pump, and you will find it to be a very sink and common sewer." He complained that nearby residents used the Collect for washing themselves and their clothes and accused them of emptying "all their sudds and filth" into the pond, "besides dead dogs, cats, &c. thrown in daily, and no doubt, many buckets from that quarter of the town." He urged that two warchmen be hired to prevent this and predicted that if it were done, the water supply would soon be fresh and pure.²⁴ Whether the city took his advice is not clear, but as the city developed, individuals began filling in the shore of the Collect and appropriating the land. In the succeeding years repeated complaints were made against this practice. A petition in 1789 asserted that the Fresh Water Pond and its adjacent wells were the chief source of water for the city and that everything "that tends to lessen the Depth of Water in that Pond or to contaminate it by an Accumulation of filth must be repugnant to the Interest and dangerous to the Health of the Citizens...."²⁵

By the 1790s the city had encroached upon the Collect to a point where something had to be done. The debate narrowed to three alternatives. One was to build a canal to the East River and turn the Collect into a harbor. A second was to preserve the Pond as a source of fresh water, while the third was to fill it in. This last process had already started unofficially in the 1780s, and it soon received official sanction. This decision did nothing to relieve the water situation, although indirectly, by intensifying the growing water shortage, it may have contributed to bringing the first water company into existence.

Market and Food Regulations

In the eighteenth-century public markets were still essential, since the farmers sold their goods directly to the consumer. Recognizing their valuable role, in 1784 the Common Council decided that while the market fees should cover the cost of ordinary maintenance and cleaning, major repairs to the markets resulting from the British occupation should be the responsibility of the city. The main markets in the 1780s were the Fly or Vly Market, the oldest and largest which had separate market houses for meat, produce, and fish, the Exchange Market, the Peck Slip Market, the Bare or Bear Market, and the Oswego or Old Swago Market. Aside from the convenience to the farmers and housewives, the markets enabled the municipal officials to keep a close watch on both the price and quality of foodstuffs.²⁷

In the colonial period the city had occasionally exercised its authority to regulate all food prices, but after the Revolution the only assizes issued were those relating to bread. In fact, one of the first measures enacted by the Common Council in 1784 required the bakers to initial their loaves and called for the appointment of "viewers of bread" to check on prices and quality of the loaves. Whenever the bakers failed to measure up to standard, there was usually a hue and cry. In December of 1786 one of the newspapers condemned certain bakers for reducing the weight of six-penny loaves by five ounces, and praised the city officials for confiscating the bread. The Assize in April of 1791 set the price of bread made from inspected superfine wheat flour at sixpence for a loaf weighing two pounds, four and one-half ounces, while a six-penny loaf made of inspected common flour was to weigh two pounds eight and one-half ounces.²⁸

The changing society which forced New York City to make the transition from a town to a city in these years also saw the introduction of the middleman and the food processor. Whatever the economic advantages of this step, it opened the door to the adulteration of food. In 1786 a newspaper editor decried what he termed "the most shameful impositions . . . carried on in our markets by a set of butter fellers, to the disgrace of the police and the injury of the citizens." These men, he said, were going around the country buying up all the good butter from the farmers, and then "mixing it with a quantity of Hogs lard and tallow." They were able to sell this mixture since the farmers no longer had good butter to bring to market. He urged that all butter not in the hands of the farmers be seized and given to the poor. A few days later a letter in response to the editorial appeared in which the writer laid part of the blame upon the farmers. Many of them, some of whom were quite wealthy, he wrote, were guilty of selling buttermilk for butter. If they would work out the buttermilk and sell good pure butter, he argued hopefully, "in process of time, the taste of the people of New-York may stand a chance of being improved." A dairyman's advertisement in 1788 suggests that all was not well with the other dairy products, too, for he announced that it was his intention "to supply the town with good Milk, unmixed with water...."29 By the nineteenth century watering milk had become almost a routine practice, and, since the water usually came from shallow polluted wells, control of the milk supply became a major concern of health reformers.

Slaughterhouses and butchering establishments were always a potential nuisance, as well as a possible source of sickness, a fact which the officials recognized. In 1784 the old abattoir was replaced by a new one erected at Corlaer's Hook, a section outside the settled part of town. Apparently the Council relaxed its regulations requiring use of the municipal abattoir and permitted butchers to slaughter near their shops. In January of 1787 a petition was received, protesting against the butchers for bleeding their cattle before slaughtering them. The Common Council agreed that such action was "injurious to the meat" and that the places where the animals were bled tended to become "offensive & injurious to the Health of the Inhabitants of this City." An old complaint against the butchers was sounded in 1788 when they were accused of tossing offal and other offensive material into the streets near their stalls. The Council responded by passing one more ordinance strictly forbidding this practice.³⁰

Once slaughtering was permitted in places other than the municipal abattoir, a series of new problems arose. For example, a law in 1700 required butchers to slaughter on their own premises. It is possible that the butchers were killing the animals in vacant lots away from their stalls so that the putrefying blood and offal would not make their places of business so offensive. The butchers seem to have had a tight little guild which enabled them to take advantage of the mounting demand, for a petition in 1789 requested the Common Council to repeal the law allowing only licensed butchers and people living on farms to sell meat "in joint or in pieces. . . ." Several years later, possibly under pressure from the butchers, the Mayor attempted to limit the number of butchers' licenses, but the Council ordered him to "license all Persons of good Character who shall apply," provided they had served an apprenticeship in New York City. What was becoming apparent by the 1790s was that the mass demand for products by the rapidly growing population was creating lucrative opportunities for shrewd businessmen. For example, John Jacob Astor attempted on one occasion to corner the market by purchasing all cattle coming into New York. This rising spirit of free enterprise was chafing at the old regulations which were designed to protect the consumer, and municipal control over trades such as butchering and baking began to weaken. While butchers were no longer strictly regulated, the city still managed to exercise some control over the sale of meat.³¹

Epidemic Disease and Quarantine

Considering its role as the chief British port during the war years, New York, as noted earlier, remained surprisingly healthy and was affected only lightly by the prevailing diseases. The same good fortune continued in the postwar period. Until vellow fever struck with full force in 1795, only a few mild epidemics developed. Measles appeared in the fall of 1788, and influenza a year later. This latter disease swept generally through America, but was fairly severe in New York City, where it lasted into 1790. In August of 1791 a malignant fever began near Peck Slip and caused a number of deaths. Its exact nature caused considerable debate among physicians and laymen. It seemed to resemble vellow fever, but this disorder had been absent for well over a generation, and in the pre-bacteriological days, diagnosis was often uncertain. In light of the onslaughts made by yellow fever in the succeeding years, however, it seems logical to assume that this was the opening assault. The case fatality rate was quite high, but the fever was restricted to a relatively small area. The following summer only a few scattered cases of the fever appeared, and New Yorkers breathed a sigh of relief. Unfortunately, the yellow fever years were only beginning. 32

The colonial quarantine laws, which had been enforced by the British during the Revolution, were officially reenacted in 1784. Bedlow's Island was again made the quarantine station and a port physician was appointed. His duty, as defined by law, was to inspect all suspected vessels and report their condition to the Governor or Mayor, who would then decide what should be done, that is, length of quarantine, and so forth. Sometime around 1788 the quarantine station was transferred to Red Hook, since in this year the Common Council agreed to lease Bedlow's Island to a private individual, reserving the right to use the pesthouse.³³ The history of all quarantine laws shows that their enforcement varied in direct ratio to the recency or imminent threat of a major epidemic disease. On this basis, it is logical to assume that the quarantine law in the 1780s was rather casually enforced. The advent

of yellow fever a few years later, however, soon made the issue of quarantine a hotly debated subject.

The State of Medicine

With the possible exception of surgery, where contact with European army surgeons during the Revolution may have led to some progress, medical practice remained much as it had been in the colonial period, and the same ambivalence toward the medical profession still characterized the public. Individual physicians were lauded by their patients; yet these same patients were often dubious of the profession at large. Indicative of this attitude was a satirical newspaper article relating how a healthy young man was persuaded to visit a physician, who administered the customary "heroic" treatment, after which the young man died. The story concluded, "... and if he dies after all this treatment, which it is fifty to one if he does not, he has had everything done for him that could be done; with which his friends are satisfied—mourn as usual—all is well, and nobody blamed."³⁴

A more significant demonstration of the deep-rooted suspicion of the profession was the notorious Doctors' Riot in 1788. Ironically it arose from the efforts of the doctors to place their profession on a more scientific basis, Drs. Samuel Clossy and Richard Bayley were attempting to create an anatomical museum in the building creeted originally for the New York Hospital and were using it to give lectures.35 Post-mortem examinations and dissection were essential to furthering medical knowledge and developing well-trained professional men, but centuries of religious teaching, plus the normal reluctance to see the bodies of relatives and friends tampered with, had long made it almost impossible to secure anatomical subjects. As medical education improved and dissection became an important part of medical training, professors and students often turned to grave robbing. In the days before anesthesia and aseptic techniques, surgery required a strong stomach. Whether for this or other reasons, medical students were considered notoriously callous and rowdyish, and this insensitivity to normal reactions may well have touched off the incident.

According to one reputed eye-witness, the riot was "provoked by the reckless and wanton imprudence of some young surgeons at the Hospital, who from one of its upper windows exhibited the dissected arm of a *subject* to some boys who were at play on the green below." One of the boys climbed a ladder to the window and was told by a doctor or student that this was his mother's arm. The boy's mother had died recently, and he ran to tell his father. When the father went to the gravevard and discovered the body missing, he told his friends and a mob gathered. The mob, after invading the Hospital building and destroying everything in it, set forth in search of the doctors who had taken refuge in the jail. The militia was called out, but rioting continued for three or four days until the Mayor finally quelled the mob by ordering the soldiers to fire into it, killing five and injuring many more. as From the extent of the rioting, it is obvious that the incident at the Hospital merely touched off the explosion and that there were more fundamental causes of unrest fermenting among the populace. Individuals in literate circles might satirize the contradiction in medical theories and the disagreements among physicians, but the average citizen had as much faith in the routine of bleeding, blistering, purging, and so on, as does his counterpart today in the efficacy of vitamins, tonics, and "shots." Thus while a mob might understandably invade a dissection room on the basis of vague rumors, literally to besiege a city for three or four days was another matter.

The medical society, although only a small group and scarcely representative of the profession at large, remained active in the postwar years. Until the Doctors' Riot, it had used the New York Hospital building, which had still not been renovated from its use as Army barracks during the war, as a meeting place. What happened after the riot is not clear, but in October of 1790 the Society was given permission to use the Common Council Chamber whenever it was available.37 Meanwhile, efforts were being made to revive medical education. In 1787 Dr. Nicholas Romayne established a private medical school, using the sick poor in the Almshouse for clinical teaching. In 1792 he applied for a charter, but his path was blocked by Dr. Samuel Bard, who was seeking to revive Columbia University's Medical Department, Romavne then allied his school with Queen's College (or Rutgers), while Bard successfully completed reorganizing the Medical Department of Columbia at the same time.38

Along with its drive to improve medical education, the medical society applied pressure for a medical licensure law. The law of 1760 which required all physicians practicing in New York City to take an examination had become virtually a dead letter. A more stringent law enacted in 1792 for New York City required each candidate for a license to show proof of having studied three years with a respectable physician. In the case of men holding college degrees, the study period was two years. All candidates were to be examined by state or local officials assisted by three reputable physicians. Only licensed physicians were authorized to collect fees. In common with nearly all early licensure laws, those already in practice or who held M.D. degrees were assumed to be competent. Since no penalties were provided for practicing without a license, this measure did little to reduce the number of quacks and irregular practitioners.³⁹

Hospitals

As it had in former years, the city continued to provide medical care for the inmates of the Almshouse. Dr. Peter Van Bueren, who had held the position for many years, was the Almshouse physician. In 1786 complaints were made to the Council and a committee of aldermen was set up to investigate the medical care given to the poor. The committee reported the following March that it could find no basis for complaint and that in its opinion the Almshouse doctor deserved "applause instead of censure." Although the Almshouse took care of the absolutely destitute, no provision was made for those who were normally self-supporting, but to whom sickness brought economic disaster. To meet this need, in 1790 the New York City Dispensary was established. It was designed "for the purpose of relieving such sick, poor persons as were unable to procure medical aid at their own dwellings & were so circumstanced as not to be proper objects for the Alms House or Hospital." The Dispensary officially opened on February 1, 1701. In the beginning it was financed solely by private subscription, but later it received help from the city. Under the original rules, each member of the Dispensary Association paid \$5.00 annual dues, which entitled him to have two patients under care at the Dispensary at all times, For each additional contribution of \$2.50 he was allowed to name another patient. The rules specified, however, that the members were not to recommend any "but such as are, in his or or her opinion, really necessitous."

The Dispensary opened with one full-time doctor, whose duties were to serve as physician, surgeon, and apothecary. He was required to attend the sick in their residences and to hold office hours from 12 to 1 P.M. on Monday, Wednesday, and Friday, where he was to give advice, administer medicine, and inoculate the poor. Although beset by financial difficulties, the Dispensary flourished. During the first four years more than 1,400 patients were seen, and it soon became necessary to enlarge the staff.⁴²

The same year which saw the Dispensary established also brought to fruition the plans for the New York Hospital. Exactly twenty years earlier the Hospital Society had been granted a charter. It had lost one building to fire, and, as already indicated, had seen its second one taken over by the British for use as Army barracks. With the return of peace, the damaged and deteriorated structure had provided temporary housing for Scottish immigrants and had been used as a meeting place and laboratory by the medical profession. Once again a drive was made for funds with both the city and private individuals contributing. As early as 1785 the Council ordered the Mayor to pay f 100 toward renovating the Hospital. With so much to be done, progress was slow, and another six years clapsed before the Hospital finally opened its doors. On January 3, 1791, eighteen patients were admitted. The following year, 1792, a room was set aside for the mentally ill, the first provision in the city for such patients. Liberally aided by state appropriations, the Hospital was soon a real asset to the city. The Hospital and the Dispensary provided valuable laboratories and clinical training for the medical profession, and, at the same time, their establishment in 1791 marks a new step in the development of social responsibility for New York City.43

The period from 1775 to 1792 was a tumultuous one for New York. On two separate occasions the population was cut by 50 per cent, yet in each instance the loss was quickly made up. The ravages of war and fire had given the civic leaders an opportunity to redesign much of the city and create a more livable community, but few of them were far-sighted enough to recognize the opportunity. The lack of city planning and the general indecision

shown by the Common Council during the 1780s was the subject of two rather bitter comments. In 1786 one observer pointed out that the area destroyed by fire had made it possible to widen two narrow streets, "heretofore the abode of dirt and diseases," but when a few old women objected "to exposing the dark recesses of *Stone-street* [and Petricoat-lane] to public view," the magistrates relinquished the scheme "with as much rapidity as they embraced it." The city, he continued, has neither good bread nor good water, yet both could be obtainable if the authorities would take firm action.⁴⁴

In January of 1788 a newspaper letter, possibly from the same source, castigated the Mayor's Office for permitting the city to develop in a haphazard fashion and for neglecting every consideration of health and beauty. For the past fifty years, successive municipal officers had "not only caused the waste of one million of dollars, but in doing it [had] injured the natural beauty of the city, diminished its harbor, lessened its security against an enemy, endangered it by fires, and facilitated the progress of infection and disease." One of the worst abuses which had been permitted to develop was that of allowing buildings to be crowded together on filled-in land along the shores of the harbor. Invariably these buildings had wet cellars, and, added the writer, "wet cellars make damp houses; and damp houses sickly inhabitants." Furthermore, "the wash and filth of the higher parts of the city" had spread over these low-lying lots, thus permeating the soil with putrid materials.45

The letter proposed that the city make rigid regulations with respect to the use of "water lors," and that strict efforts be made to preserve the shore of the North (Hudson) River, which, the writer said, was "still for the most part in its native state." The western winds passing over this shore brought pure fresh air to the city, "but from the moment that you render ground so valuable there as to narrow the streets, diminish the lots, and crowd houses upon houses—from that moment you poison the air and turn these healthful gales into infectious vapors." This prophecy proved all too true, but the writer may have been asking too much of the city administrators and their constituents. Politicians, of necessity, must deal with immediate problems, and even those with a broader vision often despair of convincing their supporters of the need for

long-range planning. The average taxpayer, then as now, felt his taxes were already too high and was little inclined to accept the burden of additional taxes for the doubtful benefit of some future good. Health and sanitary conditions were to become much worse as the population multiplied, and the industrial and technological revolutions altered society so rapidly that the existing social and political institutions could not adjust to the change. Nonetheless, there was a slow awakening of civic responsibility by the 1790s.

Notes to Chapter 4

- 1. Stokes, Iconography, I, 326.
- The Kemble Papers, I, 1773-1789, in N.-Y. Hist. Soc. Colls., 1883, XVI (New York, 1884), 415-17.
- 3. Stokes, Iconography, V, 1093.
- 4. Webster, Brief History of Epidemic Diseases, I. 268, 273-74.
- 5. Mercury, August 2, 1779; Royal Gazette, April 19, 1780.
- 6. Gavette and Weekly Mercury, April 30, 1781.
- 7. Stokes, Iconography, IV, 917-18.
- 8. M.C.C., 1675-1776, VIII, 139-40.
- 9. Royal Gazette, July 29, 1778.
- 10. Ibid., March 18, 1780.
- 11. Heaton, "Three Hundred Years," Bull. Hist. Med., XXXII (1958), 521-
- 12. Gazette, November 24, 1777 and Royal Gazette, November 27, 1779, quoted in the N.-Y. Hist. Soc. Colls., 1870 (New York, 1871), 291-92, 300-01.
- 13. M.C.C., 1784-1831, I, 16, 29, 33.
- 14. Daily Advertiser, March 17, 1786; M.C.C., 1784-1831, I, 131-32, 281, 299, 360.
- 15. M.C.C., 1784-1831, 1, 369, 379, 418.
- Sidney Pomerantz, New York: An American City, 1783-1803 (New York, 1938), 269-70; Daily Advertiser, May 11, 17, 1790; M.C.C., 1784-1831, I, 177
- 17. M.C.C., 1784-1831, I, 68, 132, 205, 719, 748, 762; Pomerantz, New York, 225.
- 18. M.C.C., 1784-1831, I, 639-40, 651, 737, II, 38.
- 19. Ibid., I, 650.
- 20. Ibid., 646-47, 754.
- Pomerantz, New York, 280; M.C.C., 1784-1831, I, 129, 194, 213-14; Daily Advertiser, April 5, 1786.
- 22. M.C.C., 1784-1831, I, 354; Daily Advertiser, January 28, 1788.
- M.C.C., 1784-1831, I, 33, 121, 128, 260-61, 265, 484; Pomerantz, New York, 278-79.
- 24. Journal, or the Weekly Register, August 25, 1785; Packet and the American Advertiser, August 19, 1784.

- 25. Stokes, Iconography, V, 1256.
- 26. Thomas A. Janvier, In Old New York (New York, 1894), 53-54.
- 17. M.C.C., 1784-1831, I, 67; Pomerantz, New York, 174-75.
- 28. Pomerantz, New York, 171; Packet, March 11, 1784; Daily Advertiser, December 1, 1786, April 18, 1791.
- 29. Daily Advertiser, January 26, 30, 1786, November 20, 1788.
- 30. Pomerantz, New York, 172; M.C.C., 1784-1831, I, 274, 379.
- 31. Pomerantz, New York, 173-74; M.C.C., 1784-1831, I, 463.
- 32. Webster, Brief History of Epidemic Diseases, I, 285; Lloyd Family Papers, II, 826; Pomerantz, New York, 340; The Medical Repository, I (1798), 316-17; M. L. Davis, A Brief Account of the Epidemical Fever which lately prevailed in the City of New York. . . (New York, 1795), 8 o.
- Pomerantz, New York, 339; M.C.C., 1784-1831, I, 359; Stokes, Iconography, V, 1827.
- 34. Daily Advertiser, March 4, 1786.
- 35. Walsh, History of Medicine in New York, I, 53-54.
- 36. The Medical Register of the City of New York, for the Year Commencing June 1, 1865, 195-97; Stokes, leonography, 1, 374.
- 37. M.C.C., 1784-1831, I, 605.
- 38. Heaton, "Three Hundred Years," Bull. Hist. Med., XXXII, 522-23.
- Coventry, "History of Medical Legislation," N.-Y. Int. of Med. & Coll. Sci., IV (1845), 152-53.
- Seventeenth Annual Report of the American Scenic and Historic Preservation Society, Appendix J (Albany, 1912), 453, 465; M.C.C., 1784
 1831, I, 263, 287-88.
- 41. Hardie, Description of the City, 263-64.
- 42. Ibid.; Rules of the City Dispensary, for the Medical Relief of the Poor (New York, 1795), 2-12.
- Pomerantz, New York, 350; M.C.C., 1784-1831, I, 143; Martha J. Lamb, History of the City of New York (New York, 1877), II, pt. 1, 306; Heaton, "Three Hundred Years," Bull. Hist. Med., XXXII, 524.
- 44. Daily Advertiser, May 2, 1786.
- 45. Ibid., January 9, 1788.
- 46. Ibid.



Part II. From Town to City, 1792 to 1825

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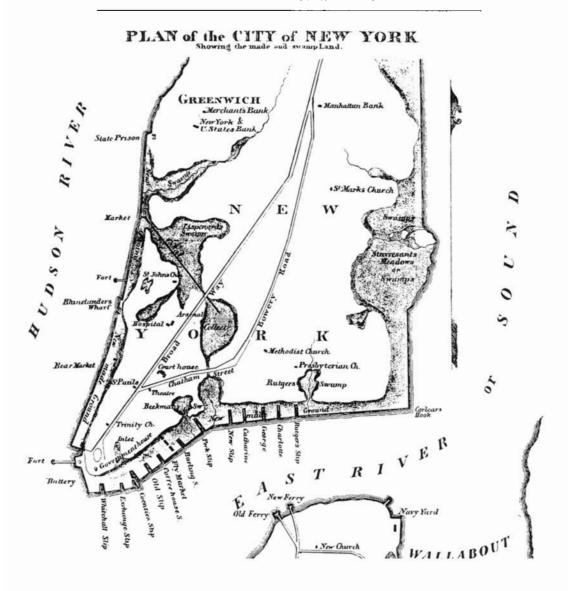
New York City's progress from a frontier trading post to the present megalopolis has been one of steady and almost incredible growth. This phenomenon is by no means unique to New York, and the ultimate end to spreading urbanism is a matter of grave concern to all thoughtful men. The expansion of New York City, however, was a particular response to the peopling of the vast American continent. Thousands of immigrants poured into the city, many of whom lacked the resources to push on to the cheap land of the West. Despite the felicitous picture of the frontier draining away the poor and unemployed, only those with capital reserves could afford to travel to the frontier. It was an expensive proposition to move a family and goods and to sustain them for a year or more until a house and barn could be built and the first crops harvested. Many immigrants did manage to move on, but a considerable portion settled in New York City and found employment in trade, processing, and the host of developing industries.

The population statistics for New York tell a revealing story and give some inkling of the responsibilities placed upon city administrators. In 1790 the population was officially recorded at slightly over 33,000. Ten years later it was in excess of 60,000. In 1810 it reached 96,000, and in 1820 it was almost 124,000. Five years later, 1825, it was estimated at 166,000. In the 1790s the municipal officers began awakening to the new obligations imposed upon them by the growing city, but the hordes of newcomers who poured into New York quickly nullified every provision for health, sanitation, comfort, and esthetic pleasure. Housing had always been in short supply, and, since the lack of rapid transportation forced the workers to live near their jobs, the result was to cram dwellings on every inch of ground and to compress two or

three families into units designed for one. With no sewage facilities and only the most ineffective water system, the tenement areas soon became literally mired in their own excrement.

The general recognition in the 1790s that the old form of city government which had struggled with reconstruction in the postwar years was no longer adequate led to a fairly drastic reorganization of the city administration. New offices were created, the administration was more centralized, duties more sharply defined, and a strong sense of civic responsibility seems to have infused the whole government. Indicative of this latter was the establishment of two new parks, the decision to fill in the Fresh Water Pond to make room for the spreading population, and the proposal of a new city plan in 1804.1 Thomas Jefferson, with his scheme for Washington, was not alone in wishing to see well-planned cities with spacious streets and parks. In every city men pleaded the cause of municipal planning and beautification, basing their case upon both esthetic and economic grounds. Aside from the pleasure to be derived from such surroundings, they argued, a clean and spacious community would more than pay for itself by promoting the general health of the people. In the days when smallpox, vellow fever, and other killer diseases periodically swept through cities and towns, the direct economic cost of such sickness was all too evident. Aside from the heavy losses entailed by death and incapacity among the adult working population, economic activity was badly disrupted, and on occasions almost halted. Even rumors of the presence of vellow fever were enough to divert shipping to other ports or to lead to a costly quarantine against vessels from the suspected city.

The medical profession, desperately groping for a satisfactory rationale, was not sure whether yellow fever was a separate discase or merely one form of the generic term "fever." There were various medical theories, but no single one could explain the many pestilences. In a world in which science and technology seemed to be performing wonders, the medical profession, torn by internal doubts and wrangles, had little to offer. One fact, however, stood out to nearly every intelligent observer. Whether disease was spontaneously generated in filth or introduced from the outside, it was always most destructive in the crowded, foul-smelling areas. Clean up the grim, dingy, putrid courts and alleys, provide



Plan of New York circa 1810. Courtesy of the New-York Historical Society, New York City.

ample pure water, fresh air, and good unadulterated food, and, if sickness was not eliminated, it would be drastically reduced. This theme had been expounded in the mid-eighteenth century by individuals such as Cadwallader Colden and was to be reiterated by many others before enough men of property could become convinced that humanitarianism was not just a Christian virtue—it was an economic necessity.

Note to Part II

1. Pomerantz, New York, 293-96.

Yellow Fever, the Number One Public Health Problem

From 1791 to 1822, a period of thirty-one years, the threat of yellow fever occupied much of the attention of health reformers, and, indeed, of the City Council itself. The disorder appeared first in 1791, raised serious apprehensions during the next three summers, and reached epidemic proportions in 1795. The following ten years mark the peak of the outbreaks, with the most serious attack in 1798. After striking in a desultory fashion in 1805, yellow fever disappeared for fourteen years. It returned in 1819, and then struck one last blow in 1822. Henceforth, although occasional cases were landed in quarantine, the disease never again became epidemic in New York City. For the rest of the nineteenth century the South Atlantic and Gulf Coast cities were to bear the brunt of yellow fever.

After the events of 1701, during which a malignant fever had caused some deaths, New Yorkers were understandably apprehensive when a yellow fever epidemic ravaged Philadelphia in September of 1703. The New York Mayor and Council discussed the danger at some length and agreed to appoint as many inhabitants as necessary in each ward to help carry "into strict execution the Law for preventing Nuisances in this City." This program, in conjunction with a rigid quarantine, may have been successful in enabling the city to escape the infection during this and the succeeding year. New York was not so fortunate, however, in the spring and summer of 1795, when yellow fever was again reported to be widespread in the West Indies. Although the first few weeks of summer proved uneventful, two observers thought they saw portents of the coming storm. Dr. Richard Bayley noted that the weather was hot and humid, with everything becoming moldy. Fruits and vegetables, he thought, were "abnormal." Dr. Valentine Scaman saw nothing unusual about garden produce, but declared: "Musquetoes [sie] were never before known, by the oldest inhabitants, to have been so numerous as at this season, especially in the *south-eastern* part of the City,"²

On July 20 Dr. Malachi Treat, the Health Officer, was summoned to visit three sick seamen aboard a vessel in the East River. The ship was probably the "William" or else the "Connecticut," since yellow fever was reported to be aboard both yessels on July 26. Dr. Treat himself caught the fever on July 22 and died eight days later. A few more cases were reported in the succeeding days, but the outbreak did not appear to be getting out of hand. Nonetheless, rumors that a malignant fever had appeared on the waterfront gradually spread through town. On August 8 John Broome, chairman of the city Health Committee, publicly denied that there was any occasion for alarm. His Committee, he said, had taken all necessary measures to prevent the spread of disease; a strict quarantine was in effect; Bellevue Hospital was prepared to receive the sick; physicians had been requested to report all fever cases; a hearse was available for fever victims; and everyone had been urged to keep the streets, cellars, yards, and lots clean.3

A week later the Health Committee again reassured the public that only a few cases of a suspicious fever existed, and that there was no cause for alarm. On August 17 a group of physicians issued a public notice declaring their belief that only the usual summer fevers were present and that no danger from a contagious disorder threatened. On the twenty-first the Health Committee conceded that there had been 12 deaths from the prevailing fever, and three days later admitted that it had become epidemic in one section of town. The disease, it explained, was merely the normal summer bilious fever.⁴

Meanwhile, the Health Committee was taking firm measures to isolate all fever victims. As soon as a case was reported the patient was promptly moved to Bellevue Hospital. This practice soon brought on a conflict with the physicians. On August 25 the Health Committee wrote to Dr. Amasa Dingley of the College of Physicians expressing astonishment at finding that the expected cooperation from the physicians had not been forthcoming, for "many if not most" of them had been withholding information. The Committee assured Dr. Dingley that it had no intention of

interfering with the doctor-patient relationship. Dr. Charles Buxton, secretary for the College of Physicians, responded indignantly that the doctors had reported all "cases of a dangerous nature," but he went on to question the policy of the Health Committee. The removal of yellow fever cases to Bellevue, he wrote, was harmful to the patient, distressing to their friends, and needlessly alarming to the public. The doctors, he added, resented this dictatorial usurpation.⁵

It is obvious that the physicians had little enthusiasm for having their patients suddenly removed from their jurisdiction. In the first place, in view of the long rough ride by horse and eart to the hospital, the physicians were justified in worrying about the danger of moving the seriously ill. In the second place, few of them really believed the disease to be contagious. On September 5 the Medical Society passed a specific resolution to this effect and sent it to the Health Committee.⁶ Just as this clash was occurring, the number of cases took a sharp upturn. Many citizens had sent their families out of town in August, but early in September a mass exodus got under way. Ironically, in New York as elsewhere, the refugees were invariably of the middle and upper classes, the groups who were least prone to the disease. Those living in the dock areas where the fever prevailed could not afford to leave.

As news spread of the yellow fever epidemic, the Governor of Pennsylvania proclaimed a quarantine against New York. Governor John Jay of New York, explaining that the proclamation had tended "to produce embarrassments to the commerce of this city," requested the Medical Society, College of Physicians, and the City Council to investigate whether a contagious disorder was present. The evidence by this time was conclusive, and all groups concurred in their report. Between July 30 and September 8, no fewer than 80 yellow fever deaths had been reported and 44 patients had been sent to Bellevue. In reporting these facts, John Broome, speaking for the Health Committee, which was sensitive to the criticism from the physicians about the use of Bellevue, declared that in view of the seriousness of the epidemic the Committee had been fully justified in its measures."

Despite all precautions, the number of cases increased in September and remained high until the latter part of October, when the onset of cool weather brought a sharp reduction. New York-

ers, who had contributed generously to Philadelphia during its time of trial in 1793, were amply repaid in 1795 when the City of Philadelphia sent a gift of \$7,000. On October 6 Mayor Richard Varick of New York, in acknowledging the contribution, reported that the deaths had now reached 525, but that the Health Committee believed the epidemic to be subsiding. By the beginning of November the outbreak was virtually at an end. A pamphlet issued at this time under the auspices of John Broome declared that only 13 cases were being treated at Bellevue and that 12 of the patients were out of danger. In its final report, the Health Committee placed the total of yellow fever deaths at nearly 750. Inasmuch as the population was only slightly over 40,000 and a great many residents had left the city, the epidemic had proved costly.⁸

Aside from loss of human life, the direct financial cost completely disrupted the city finances. Part of the expense had been defrayed by some \$8,837 contributed from Philadelphia and neighboring towns. The City Council had spent large sums in August and September, and on October 26 appropriated another \$2,500 for the Health Committee, \$1,500 toward expenses at Bellevue, and \$1,000 to relieve the poor. In November the Health Committee asked for another \$5,000, but received only \$2,000. The following week the City Council, still faced with major obligations arising from the epidemic, applied for a further loan of \$5,000 from the Bank of New York. Bills for the epidemic were still coming in as late as March of 1796, when the Mayor authorized payments amounting to about \$5,000 for expenses incurred by the Health Committee.⁹

With the events of the preceding summer in mind, the New York Medical Society and the City Health Committee both recommended a program for what they termed purifying and cleansing the city. Meanwhile, the Health Officer, Dr. Richard Bayley, was also agitating for more effective action on the part of the municipal authorities. On July 1, 1796, he wrote to Governor Jay stating that he had notified the Mayor at the end of April of a highly dangerous condition in the Whitehall area. In the process of filling in a wharf and slip, two dead horses had been buried and a third carcass was about to be covered up. Already several hundred loads of street dirt had been dumped on the spot, and Bay-

ley was sure that the miasma generated from this material in the summer heat would prove injurious to all in the area. He urged that the wharf be covered with a mixture of clean gravel, earth, and lime. On July 20 he replied to a letter asking him whether yellow fever was present in New York by stating that a disease resembling yellow fever had appeared in the Whitehall area. He attributed its presence to the putrid materials used in filling the slip, but added that the City Council was trying to cover the area with good wholesome dirt and that the "dock-fever" had now disappeared. He concluded his letter by saying, "You may come to town with safety," but he advised keeping away from the dock area.¹⁰

The outbreak which had begun near Whitehall around the middle of July, 1796, spread slowly but did not move far from its original focus near the docks. Prompt removal of the sick to a new pesthouse established on Bedlow's Island may well have helped to minimize the epidemic. Nonetheless, when the fever had run its course late in the fall, there had been 247 cases and 69 deaths.¹¹

Having experienced two successive outbreaks in 1795 and 1796, the city officials kept a sharp watch for suspicious fever cases in the spring and summer of 1797. The months of July and August passed uneventfully, but as the health officials were beginning to relax, early in September Dr. Anthony Anderson reported a case of yellow bilious remitting fever. Dr. Bayley investigated, confirmed the diagnosis, and, upon inquiry, found a series of similar cases. Fortunately, the outbreak occurred late in the season and not much damage was done. Most of the patients were transferred to Bedlow's Island, where Dr. Samuel Osborn, the surgeon in charge of the pesthouse, was able to provide satisfactory care. He reported, however, that the buildings were inadequate and that the staff had given him some trouble. Between 20 and 25 deaths occurred, probably representing about 60 to 100 cases. 12

Although the yellow fever attack during 1797 had been relatively light, early the following April the Health Officer and the Commissioners of Health began preparations for the coming summer. Under the threat of imminent war with France, New York State was erecting fortifications on Bedlow's Island. Realizing that this would preclude using the pesthouse on the Island, the health commissioners requested and were granted permission by

the Council to use Bellevue as a substitute in the event of a fever outbreak. John Oothout, who had done such notable work as health commissioner in 1797, again began directing the attention of the Mayor, Sheriff, and Board of Aldermen to public nuisances. His detailed and exact letters exempted neither private nor public property. The state of the jail, poor drainage, accumulations of dirt, and other danger spots all brought firmly worded injunctions from him. The recurrence of yellow fever and the seriousness of the attacks in other cities also served to keep the Common Council on its toes, and the members happily cooperated with their two energetic health officials, Oothout and Bayley.¹³

Dr. S. L. Mitchell, in writing of New York at this time, declared that its citizens had really poisoned their city. In using this terminology, he was speaking of the common practice of filling in land with garbage, street manure, and offal. He was not implying that the city was dirty, for nearly all observers agreed with James Hardie that it was remarkably clean and healthy when news was received in July that a pestilential fever had appeared in Philadelphia. There was no alarm since New York was preoccupied with military preparations; in addition, the citizens had confidence in the vigilance and ability of Health Officer Bayley and Alderman Oothout.¹⁴

About the end of July Melancton Smith, the Revolutionary Patriot, died of a malignant fever, but his death was scarcely noted. On August 6 Dr. Bayley complained to the Mayor about conditions on the docks between Coenties' and Old Slips, reporting that several persons had fallen sick with symptoms resembling vellow fever. Promptly the Mayor gave public notice that all health laws would be strictly enforced, and the Common Council agreed to meet with the health commissioners to see what could be done about Bayley's complaint. A heavy rainfall from August 12 to 14, which caused some flooding, was welcomed by those who thought that the rain would wash away dirt and purify the air. A letter in the Commercial Advertiser, however, warned that stagnant water constituted a grave danger and urged that all standing pools be drained and cellars pumped out. The advice was sound, even though the writer was undoubtedly concerned about the threat from miasma rather than from mosquitoes.15

On August 13 Oothout addressed a circular to 15 merchants, accusing them of storing "putrid or spoiled Beef" on their premises and urging them to get rid of it immediately. A few days later he positively forbade a contractor to dig into one of the docks in order to prepare a foundation for a new building because of the danger of disturbing unwholesome dirt. On August 20 he submitted a long report to the Mayor in which he mentioned that there had been nine deaths from the fever. He noted that clean gravel had been spread over certain notoriously filthy lots, and he pressed for more speed in draining the water from Lispenard's meadow. In response to several requests that garbage and offal be removed more frequently, Oothout stated that, if it was agreeable, he would hire five seavengers at a cost of 12 shillings per day per man to remove the garbage on Monday, Thursday, and Saturday.¹⁶

Despite the vigilance of the health officials, around August 24 the number of cases and deaths increased sharply, and a mass exodus got under way. Thousands began fleeing from the city, and businessmen started removing their offices and places of business from lower Manhattan to Greenwich Village, at that time a small rural community. By the end of August the number of yellow fever victims had climbed to over a hundred. What was more significant, the fever was now appearing in districts that had hitherto been exempt. The health commissioners redoubled their efforts, inspecting cellars, storage places, and carefully examining barrels of salted meat and other perishables. With respect to the latter, John Oothout issued orders that the inspectors must insist upon boring into all barrels to be sure that the meat was not spoiled, adding the following injunction: "Do not be sparing in the use of quick lime where you find the cellars offensive!" 17

Nothing seemed to avail, and in September the deaths soared to over 950. As the situation grew critical, an unprecedented spirit of humanity swept the town. In the jail some 163 debtors were imprisoned, and it was feared that once the disease gained a foothold, a calamity would ensue. William Parker, the jailor, promptly had all cells cleaned and whitewashed and appealed to the city for provisions, since debtors were responsible for their own board. He then got in touch with the various creditors and was able to

gain the release of all but 39 debtors. To facilitate the process, he relinquished his fees and personally contributed toward other legal expenses.¹⁸

By the first week in September, as the number of sick mounted and many families were made destitute by the death or incapacity of the wage-earner, the City Council created a special standing committee and gave it almost carte blanche authority. Bellevue had quickly filled, and this new body, known as the Health Committee, acting with unprecedented speed, within eight days creeted two additional buildings. Both structures were 60 by 20 feet in size. One of them, a two-story building, was designed for the use of convalescent patients. At first, as had happened on other occasions, the quality of the nurses and attendants was poor, but as the city rallied to meet the crisis, able people responded to the call, and the Hospital was soon functioning smoothly and efficiently. The City Dispensary, too, was operating under emergency conditions, and admitted 270 yellow fever patients. To provide care for the sick who remained in their homes, the Health Committee hired three visiting physicians on a full-time basis. 19

With economic life completely disrupted, feeding the poor became a major concern of the Health Committee. Fearing that many heads of families might spend cash on liquor, the Committee established three provision centers where the poor were supplied with soup, boiled meat, bread, candles, and so forth. During the peak of the epidemic, the number fed at these centers ranged from 1,600 to 2,000 a day. In addition, another 800 were provided for at the Almshouse. Over and above those who were supplied with cooked food, 500 families were permitted to obtain free rations at temporary stores. The Almshouse became the relief center, and members of the Health Committee remained there from eight in the morning until eight at night interviewing applicants and investigating appeals for help. As a result of their exposure to the sick, the Mayor and two members of the Health Committee came down with vellow fever, but fortunately all three recovered.20 The picture was not all sweetness and light, however, for "such was the meanness of some possessed of considerable property" that they tried to obtain "part of a fund exclusively intended for the relief of the helpless." Furthermore, certain rapacious landlords evicted poor tenants for nonpayment of rent. The

Committee deemed it inappropriate to spend money for rent, since it would merely have filled the pockets of the rich "whilst the poor would have remained in the same state of misery and distress." Landlords such as these, however, were the exception.²¹

The advent of October saw the city completely mobilized for the emergency. It also brought cooler weather, and the number of cases began to fall off. The death toll for October was less than half that during September, but still yellow fever carried away an additional 431 persons. On November to the health commissioners were able to notify the public that it was safe to return to town. By this time the total number of deaths amounted to 2,086, of which 1,524 were estimated to have been caused by yellow fever. If the deaths of those who contracted the fever in New York but died outside the city are included, the death toll from the fever probably ranged over 2,000.²²

The economic cost in terms of the loss of production and the disruption of normal trade and commerce is difficult to assess, but the City Council on March 16, 1700, reported that it had spent \$11,600 of the city's funds to relieve the sick and poor. The Health Committee of the Common Council, which spent both city and private contributions, listed its total expenditures as \$28,379.18, Sidney L. Pomerantz, in his study of New York City, asserts that the Legislature contributed another \$45,000. This figure seems high, unless it includes the quarantine measures and the precautions taken to protect the military garrison. Reflecting the state of medical knowledge, on January 28, 1799, the Common Council set aside February 5 as a day of "Thanksgiving, Humiliation and Prayer." The Hand of the Lord had lain heavily upon New York, and whether its citizens had been guilty of sins of commission or omission, it was hoped that through prayer they could search their hearts and come to see the error of their ways.²³

As the spring and summer of 1799 advanced, the City Council, its power strengthened by a new health act, once more began paying close attention to the sanitary condition of the city. In spite of a strict quarantine and an effective sanitary program, yellow fever returned on July 25 and lingered in the city until October 21. Following the recommendations of the joint committee, large areas in the region of the docks were evacuated and the poor housed in tents on high ground. Partly as a result of these measures and

partly because of the immunity engendered by the previous epidemic, the official count of yellow fever deaths was only 356, by no means a negligible figure in relation to the city's population but relatively minor compared with the toll for the previous summer. Determined to do all that was humanly possible to stop the attacks of this dreadful pestilence, on July 29, just as the epidemic was getting under way, the Common Council employed Dr. Adolph C. Lent at four dollars a day to keep a careful day-to-day record of the progress of the disease. Dr. Lent's study proved no more useful than studies made by literally hundreds of physicians during the nineteenth century. These detailed observations on the course of yellow fever outbreaks definitely established certain unique characteristics of the disease, but they were of little help until the bacteriological breakthrough.²⁴

For the next three years the fever appeared each summer, but never spread far from the docks on the East River. Dr. Valentine Scaman reported that he treated approximately 150 patients during the summer of 1800. The infection, he wrote, was milder, and he lost only one patient. Officially 67 deaths were attributed to the fever, although a few deaths may have been unreported. The next summer only a few scattered cases of the so-called "bilious fever" were reported, but the following year, 1802, the disease began in the middle of September and killed almost 140 persons before cool weather put a stop to it. Although the mortality was not high, news of the epidemic caused "a great alarm," leading thousands of citizens to flee and causing a serious disruption of business activities. 26

In the summer of 1803 yellow fever once again flared up to serious proportions. Cases of "Bilious Malignant Fever" were reported as early as July 20, and by August 5, of the 33 cases reported, 16 had terminated fatally. The first public notice of the disease was an indignant letter to the editor of the Evening Post on August 4 criticizing the newspapers for keeping silent about the yellow fever, the existence of which, the author wrote, "is universally admitted." The following day a notice from the Mayor's Office officially conceded that a number of fever cases had been diagnosed aboard vessels in the harbor, and that the disease was spreading in the vicinity of the Coffee House Slip. Three days later the Common Council authorized the Health Committee

to use Bellevue for the reception of fever patients and to take all measures necessary to care for the poor and the sick. The sum of \$1,000 was appropriated for this purpose, but on August 11 the Council authorized the Mayor to issue warrants to the Health Committee to the amount of \$10,000. At the same time, the Council gave to any persons feeling it necessary to remove from the city permission to use the "Common Lands for the purpose of erecting temporary habitations. . . ." For those who could not afford to do so, the Council pushed ahead with its own building program on the Common land about three and a half miles from the city. On September 13 it announced that temporary housing was available for those poorer citizens living in areas where yellow fever was most prevalent.²⁷

By this time hundreds of business and professional men had already sent their families out of town and many had moved their offices. The city itself had undertaken a mass evacuation from the area where the fever was concentrated, and a large section of the city was literally deserted. Recognizing the danger from looting. on September 20 the Health Committee was given control of the night watch. The estimates vary, but over one-third of the inhabitants fled during the outbreak, reducing the population from about 60,000 to less than 40,000.28 There can be little question that the policy of wholesale evacuation was successful in minimizing the impact of the disease. Even so, the records of the Health Committee show that there were 1,639 cases and 606 deaths. The Evening Post, which never hesitated to criticize the municipal government, praised the efforts of Mayor Edward Livingston, who had contracted yellow fever during the outbreak, and the members of the Health Committee for their zeal and attention to duty. At the end of the year, the Council, which had already covered the temporal front by investing money in a day-by-day study of the epidemic, took another safety precaution when it acceded to the demand of the clergy and proclaimed December 21 as a day of "Humiliation, Thanksgiving and Prayer,"29

The relatively mild, pleasant summer of 1804 was not marred by any pestilential fevers, and the municipal authorities, who had watched with bated breath, heaved a sigh of relief at the onset of cool weather. Significantly, none of the other Atlantic coast ports suffered from yellow fever either during this year. The respite

was brief, for the next year the disease reappeared. The city officials could not be charged with negligence since they had taken every precaution known at that time. Throughout the preceding winter the old Health Committee, and the new one which took office on March 25, had been assiduous in directing the attention of the Mayor and Council to possible danger spots. On May 24 a quarantine was established against all vessels arriving from the West Indies, Although the quarantine was enforced strictly, a controversy arose over the fact that the Health Officer, Dr. John R. B. Rodgers, did not believe in the contagiousness of vellow fever. Whatever his personal beliefs, Rodgers does seem to have carefully enforced the law. 30 On July 12 the Board of Health listed the measures which it had taken against vellow fever, and there was scarcely anything related to health and sanitation that had been overlooked. Not only were vessels from the West Indies compelled to remain in quarantine, but all hides, foreign cotton, and damaged coffee, items which were thought to carry the "fomites" or particles of yellow fever, were rigidly excluded. Under the general heading of "internal" regulations was a long list of measures concerned with garbage removal, privies, offensive trades (tanners and the like), street cleaning, food inspection, burials, and so forth. Seemingly every precaution had been taken, and New York could look forward to another pleasant and healthful summer.31

On June 7 a malignant fever case was reported to the Board of Health. The attending physicians disagreed over the diagnosis, but for safety the Board ordered the patient removed to the Marine Hospital. On July 18 two more cases were reported, and this time the attending doctors agreed that the disease was yellow fever. Both patients were sent to the Marine Hospital. Subsequently three other physicians, including Dr. David Hosack, visited the hospital. After examining the patients, they concluded that the disease was not a malignant fever but rather the common bilious fever of summer. Although one or two additional cases of malignant fever were diagnosed in August, no one felt there was any real danger. On August 29 the Board of Health congratulated New Yorkers on the excellent state of their health and urged them to keep their cellars purified and ventilated. Within a week, however, rumors were spreading like wildfire and the city was close

to panic. The truth of the rumors was confirmed when the Board of Health announced on September 5 that there had been ten cases of malignant fever with four deaths during the past three days. The Board assured the public, however, that there was no cause for alarm,³²

This assurance proved too optimistic. Within a few days it was necessary to open Bellevue Hospital to care for the destitute victims of yellow fever, and a mass exodus from the city was in full swing. The Customs Office, Post Office, and newspaper and business offices were all moved to Greenwich Village. This precipitous rush from the city was just as well, for the number of cases jumped rapidly during September. By the thirteenth the Board of Health had found it necessary to take over control of the fire and watch departments and erect temporary housing for those wishing to leave the infected area, a section running along the East River from Burlington Slip to Old Slip and as far west as Pearl Street, Everyone was urged to leave the area immediately, but they were told not to move into the healthy parts of the city, since it was feared that refugees might carry the fever with them. Those who, in the words of the Board, chose to wantonly expose their lives by failing to move were warned that the Board would use its compulsory powers.33

Fortunately, the outbreak subsided almost as quickly as it had developed, and on October 12 the Board of Health announced that the people could return to their homes. On October 29 the Evening Post placed the death toll at 254 and the number of cases at 607. Two weeks later the Board of Health reported a total of 600 cases and 262 deaths from September 5 to October 25. The surprising thing about these events was the way in which the Board of Health was given the complete backing of the Council and provided with an almost unlimited expense account. The cost of evacuating a crowded section of the city in a day of limited taxing power was enormous, yet no one questioned that it should be done. During the approximately two months of the fever, the Board of Health was authorized to spend up to \$50,000 and actually spent almost \$25,000, a considerable sum and one that might have been expected to raise shrill cries from indignant taxpayers.³⁴

This willingness to spend whatever was necessary indicates an unusually high sense of civic responsibility on the part of the middle- and upper-class New Yorkers. Moreover, in view of the short flight range of the Aedes aegypti mosquito, the policy of wholesale evacuation was basically sound. Probably the best proof is that none of the 60 physicians who attended the sick caught the fever, a sharp contrast with the epidemic of 1798 when at least 16 lost their lives. While some of the physicians may have become immunized during previous epidemics, at least part of the credit is due to the policy of evacuating the sick. Physicians who attended patients in the fever districts were far more likely to be attacked than those who attended them in Bellevue, the Marine Hospital, or the evacuation centers. In 1805 there was little occasion for the doctors to visit the focal points of infection, since virtually all the residents had been removed.³⁵

Another significant point about this epidemic is that it stimulated a demand for statistical information. John Pintard, an outstanding civic leader, had started collecting mortality statistics for New York City as early as 1802 and had advocated the registration of births and marriages. On November 18, 1805, the Board of Health recommended to the City Council that, in order to provide a means for calculating the extent, virulence, and ravages of the disease, an enumeration should be made of all inhabitants who had remained in the city during the epidemic. This way, the Board added, it would be possible to determine which areas in the city were safest and which were most prone to the fever, thus avoiding the general flight which so often ensued on the appearance of the disease. A true knowledge of the number of deaths in relation to the population might prove, too, that the mortality was far less "than has been generally supposed." Finally, the physicians would be able to compare this epidemic with past and future ones, and thus "Deduce inferences of a practical & perhaps of a very interesting nature." The Council acceded to the request, and Pintard, in his capacity as City Inspector, later reported that the total population at the start of the epidemic was 75,770. Of these, 26,966, or more than one-third, fled from the city during the course of the outbreak. Inadequate as the statistics are, they at least indicate a growing awareness of the need for quantification.36

Following the 1805 outbreak, as already indicated, yellow fever disappeared for fourteen years. The exact reason is not clear, although the intensive sanitary and drainage campaign embarked

upon by the health authorities in the preceding years may have reduced the breeding places for the mosquitoes, while the quarantine should have served to prevent the entrance of active cases. Yet, if one judges by the editorials in the Evening Post in June of 1806, conditions were only a little better than they had been during the yellow fever years. According to this paper, the quarantine was totally ineffective and the internal precautions were "extremely defective," Its editor was particularly bitter over the failure of the scavengers to collect garbage and offal more than twice a week during the hot summer months, and he asserted that "compared with those of Philadelphia or even of Boston the streets of New York are scandalously dirty and filthy." The refusal of some physicians to report cases of vellow fever to the Board of Health was another exceedingly sore point with the editor of the Post. He proposed that the fine for such negligence be raised to \$500 and that the law be strictly enforced. Inasmuch as the problem of reporting certain contagious diseases still exists today, the Evening Post editorials were quite obviously fighting a losing battle.37

In any event, except for an occasional sporadic case or two (and even here the diagnosis is always open to question), yellow fever was no problem. Brooklyn witnessed an outbreak in 1800 but it was restricted to a small area. About 20 New Yorkers were attacked, but all of them had visited or spent time in the focal point of infection in Brooklyn. A minor outbreak occurred two years later in Perth Amboy, New Jersey, but this, too, was contained.³⁸

Despite New York's long exemption from yellow fever, its citizens became quite apprehensive in June, July, and August of 1819 when rumors of a malignant fever began to spread. Early in July the Board of Health sent Dr. Jacob Dyckman to Philadelphia to investigate reports that pestilential fever cases had developed there. He reported to the Mayor that all cases had been removed and that Philadelphia represented no danger. Inquiries were also sent to the Boston Board of Health, whose president reassured the New York authorities that there was no occasion for alarm. Nonetheless, on July 13 Mayor Cadwallader David Colden, whose grandfather had been prominent in New York's earlier history, resolved to strengthen the quarantine by offering a \$100 reward for information leading to the arrest of anyone breaking the law. Early in August rumors of the presence of yellow fever in New

York, Baltimore, and Boston were again rampant, and the New York and Baltimore newspapers engaged in verbal battles, each accusing the other of concealing evidence of the disease.³⁹

On September 5 the Resident Physician, Dr. Felix Pascalis, and Dr. Thomas Boyd reported two suspicious fever cases in the vicinity of Old Slip. After a thorough investigation, the Board of Health held a special meeting and issued a statement, saying that since several deaths had occurred in the neighborhood of Old Slip, the residents were advised to leave, and that ships should be moved from the docks. The City Inspector and his assistants were ordered to make a thorough examination of the suspected area. Two days later the Board issued another long statement in which it listed all deaths occurring in the Old Slip neighborhood since August 23, told of the precautionary sanitary measures it had taken, and apologized for asking the inhabitants to move. Anticipating objections to its plan for evacuation, the Board explained in detail why this was necessary. It then aptly summarized one of the most basic difficulties confronting all public health officials when it declared: "Measures of precaution, when attended with present inconvenience, are always unpalatable, and they usually become more so, when most completely successful. It frequently happens that their failure is received as their best justification."40

The advice to evacuate the infected part of town was soon followed by a compulsory order, and on September 13 the Common Council passed an ordinance empowering the Board to evacuate any section it deemed necessary. Meanwhile, a group of citizens had met at the Tontine Coffee House and endorsed the actions of the health officials, although a few of the businessmen in the Wall Street area were less than enthusiastic.41 On September 11 Health Officer Dr. Benjamin DeWitt had died of fever, and the shock of his death had helped to gain public support for the fairly strenuous measures proposed by the Board of Health. By September 18 panic swept through the city, and once again the citizens began leaving in droves. John Pintard wrote on this day that loaded carts were constantly passing his door. "We are like a city in a siege," he added, "the Inhabitants fleeing they know not whither...." Two days later the city barricaded the streets leading into the infected area on the East River, from Coenties Slip up Pearl to Wall Street, and then down to the Coffee House Slip. To

ensure that the watchmen would remain on their jobs in the deserted section, the city offered to pay the medical expenses of any who got sick and to continue their regular pay during the period of sickness.⁴²

A storm on September 22 filled many cellars with water. Fearful of the danger from this water becoming stagnant, the Board of Health decided to use fire engines to pump out the cellars of warehouses and to permit employees of those who had moved to drain the cellars and clean and ventilate homes. The relaxation of the evacuation order led some businessmen to open their stores in the infected district and remove goods from them. In criticizing these actions, one newspaper commented that the poor had given up their homes and occupations—could the wealthy be less public spirited? The number of cases, which was never very large, began falling off in October, and the end of the outbreak was hastened by a heavy frost on October 14. Five days later the health officials proclaimed the epidemic over and advised all citizens that they could safely return.⁴³

The existence of a surprisingly large number of accounts of this epidemic and the strenuous measures taken by the city give the impression of a fairly serious attack. Compared with the earlier outbreaks, however, this one was quite minor. Altogether, only 38 deaths and a total of 63 cases were recorded. The explanation for this relatively small number of casualties may well lie in the decisive action of the Board of Health. According to one observer, within four days 20,000 people moved out of the city. Most of them moved voluntarily, but many were ordered to go. It would appear that the decision to evacuate a section of the city could scarcely be justified on the basis of what was, for the nineteenth century, only a few cases of fever. Yet, as the Board itself pointed out when it issued its edict, the minor nature of the outbreak may well have demonstrated the effectiveness of its actions. Without such a drastic step, the disease undoubtedly would have claimed far more victims in the crowded dock and business area.44

In the summer and fall of 1820, a fever of some sort appeared in the vicinity of Bancker Street. Altogether, there were 237 cases and about 40 deaths. Most of the victims were Negroes. When the Board of Health was notified about the fever cases, it promptly arranged for their care in Bellevue, the Almshouse, and the New York Hospital. The physicians for the Board of Health who examined the patients all agreed that the disease was not yellow fever. The New York Medical Society, however, took exception and subsequently published a pamphlet, asserting that yellow fever, rather than bilious fever, had been the culprit. A brief pamphlet war ensued in which both sides sought to justify their diagnoses. The Board of Health summarized its case against vellow fever by arguing that Negroes, the chief victims in this instance, rarely contracted yellow fever, that only eight cases of black vomit had occurred, that the disease lasted into December, long past the first frosts, and that the low case mortality itself proved the disease to be something other than yellow fever. 45 It is impossible to say at this date which side was correct, although the disease could have been vellow fever. Negroes in the nineteenth century generally did have some degree of natural immunity to yellow fever, which might have accounted for the relatively low fatality rate. On the other hand, with typhus, typhoid, and malaria (to mention a few of the fevers) often present, the outbreak was more than likely to have been one or more of the other disorders.

The year 1821 passed uneventfully, but the next one saw the final yellow fever attack upon New York. Whereas in former years the disease had been confined largely to the poor and crowded dock sections on the East side, this time it broke out in a well-to-do section just off the Hudson River. Once again the physicians clashed over the question of diagnosis. In July a Dr. Nielson first drew the attention of the health commissioners to what he called a "bilious malignant fever." Subsequently on August 1 when his diagnosis was confirmed by Dr. David Hosack but rejected by the Resident Physician and health commissioners, Nielson wrote a letter to the *Evening Post* criticizing the health officials. The editor of this newspaper, who had been warning of the danger from yellow fever, accused the Board of Health of risking the lives of citizens. The matter was resolved on August 5 when the Resident Physician confirmed a diagnosis of yellow fever. 46

Although not officially proclaimed until this date, the disease had begun its course on July 10 in Rector Street and soon spread down Washington and Greenwich Streets. Within five or six weeks cases had appeared on Cedar and Liberty Streets and the infection then crossed Broadway. By the middle of September it had affected all of the city lying below Fulton Street. Once again thousands of New Yorkers fled their homes and others were ordered to leave.⁴⁷

Because the disease in 1822 appeared in widely scattered areas, the policy of compulsory evacuation was not as effective as it had been earlier. The Board of Health resorted to this policy on August 7 when it evacuated and fenced off the section bounded by Rector, Broadway, Lumber, and Thames Streets. When this failed, the Board then tried to purify the air by spreading lime, charcoal, tanner's bark, and ashes in certain streets. This was equally ineffective, and only the advent of cold weather brought relief. The final summation showed the epidemic to have been much more serious than the one of 1819. A total of 415 cases and 230 deaths were recorded by the Board of Health between July 10 and October 26. However, the following January it was reported to the City Council that of the 3,231 deaths for the year, some 388 resulted from the fever. Regardless of which figure is correct, the outbreak was comparable in scope to the one of 1805.⁴⁸

Fortunately, the year 1822 saw the end of yellow fever in New York. Occasional cases appeared in quarantine, and yellow fever scares continued to aid health reformers in their efforts to bring about sanitary improvements in the first half of the nineteenth century, but the disease did not gain a foothold in the city proper. It came close to doing so in 1856 when it broke out in Brooklyn and elsewhere on Long Island. On this occasion, the New York quarantine effectively checked its spread.

The thirty-odd years during which yellow fever ravaged or threatened New York were significant ones in the city's development. During this period the population increased fourfold, and, of necessity, major changes were made in the administrative organization. Under the constant threat of yellow fever, officials and citizens alike became increasingly conscious of sanitary conditions and the need for effective sanitary policing. Health and street commissioners made their appearance, a Health Board was created, the Office of City Inspector came into existence, and a start was made toward securing a sufficient water supply. The disruption brought about by yellow fever outbreaks compelled officials to assume welfare responsibilities on an unprecedented scale. If sick

workers were to be given medical care, then it followed that their families must be fed. If, in order to avoid an even greater catastrophe, civic officials found it necessary to move people away from their jobs and businesses, it also followed that some provision must be made for housing and feeding them. Since disease definitely tended to center in the dirty and crowded sections, giving credence to the assertions of the sanitationists, more sanitary regulations were necessary—and, as a corollary, more inspectors and officials were needed to enforce them. Even without yellow fever, these changes would have come, but there can be little question that this fearsome disease gave a strong impetus to sanitary reform and undoubtedly speeded up the process.

One other question still remains: How effective were the methods of the health officers in preventing and combating yellow fever? On the face of it, any effective program for cleansing the city was bound to reduce the incidence of disease, although not necessarily yellow fever. Emptying cellars and draining the streets and lots of stagnant water undoubtedly reduced the number of mosquitoes, but how much this would affect a household mosquito like the Aedes aegypti is difficult to say. The quarantine unquestionably prevented the landing of persons having yellow fever. Here again, since the quarantine measures were directed against individuals and cargoes rather than mosquitoes, they could not have established too tight a screen. Undoubtedly the most effective weapon used at this time, as noted before, was the policy of mass evacuation. It was ruthless and expensive, but, particularly where the disease was highly localized, it was effective. It worked because it left no one for the infected mosquitoes to bite, and it removed the sick to sections which were free of infected Aedes aegypti.

It would be nice to be able to give full credit to the New York health officials for the elimination of yellow fever. They took firm and decisive measures and surely deserve a high mark for effort. If one looks at the pattern of yellow fever attacks along the Northeast Atlantic Coast, however, one can only assume that the municipal officials in Boston, Philadelphia, Baltimore, and other cities were equally alert and active. Or, and this may be more likely, that the rise and fall of yellow fever bore only a limited relationship to local health measures. The periods during which

yellow fever struck at New York were the same that found the disease in Baltimore, Philadelphia, and elsewhere. By 1825 yellow fever was virtually eliminated from the northeastern cities, but it was just beginning to move toward its peak along the South Atlantic and Gulf Coasts. In this latter area, too, the rise and fall of yellow fever followed a general pattern which seemed to be independent of local quarantine and sanitary measures.

The foregoing is not to say that higher standards of living, which brought screens, closed sewer systems, improved drainage, better food, and a host of other environmental changes, did not affect the history of yellow fever in the United States. However, in the nineteenth century the type and nature of shipping between the United States and the West Indies, the extent and virulence of the disease in West Indian ports, and quite possibly meteorological conditions in both areas as they affected the *Aedes aegypti* may all have been at least as important in determining the nature and course of yellow fever in New York and other American cities.

Notes to Chapter 5

- 1. M.C.C., 1784 1831, II, 34.
- Richard Bayley, An Account of the Epidemic Fever which prevailed in the City of New-York, during part of the summer and fall of 1795 (New York, 1796), 51ff.; Valentine Seaman, An Account of the Epidemic Yellow Fever as it appeared in the City of New-York in the year 1795 (New York, 1796), 3.
- Davis, A Brief Account, 18 20, 38 40; Bayley, Account of the Epidemic Fever, 88.
- 4. Davis, A Brief Account, 21-24.
- 5. Ibid., 27-31.
- 6. Ibid., 35-37.
- 7. Stokes, Iconography, V, 1324; Davis, A Brief Account, 38-40.
- 8. Davis, A Brief Account, 50-52; Names of Persons who have died in New-York of the Yellow Fever, from the 29th of fully, to the beginning of November (New York, 1795), 4-26.
- Names of Persons who have died, 3; M.C.C., 1784-1831, II, 192, 198, 200;
 Stokes, Iconography, V, 1330.
- Richard Bayley, Letters from the Health Office, submitted to the Common Council, of the City of New York (New York, 1799), 5-9.
- 11. Ibid., 13-14, 20-27, 37-40.
- Ibid., 54-59, 61-63; John H. Griscom, A History, Chronological and Circumstantial, of the Visitations of Yellow Fever at New York (New York, 1858), 8.

- 13. Bayley, Letters from the Health Office, 70 74.
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The Beginnings of Organized Public Health

Since the occasional appearance of pestilence was still a strange and inexplicable phenomenon, even the best-intentioned municipal officials were never quite sure just what was the best method for preventing or fighting it. As already noted, the evidence clearly indicated that some diseases were contagious, that is, spread by direct contact, but it was equally clear that in the case of other disorders, most notably yellow fever and malaria, certain intangible factors were involved. In practical terms, officials had to decide whether to try to keep out the infection by means of a rigid quarantine, or whether to assume that the disease was spontaneously generated under certain predisposing conditions and thus attempt to prevent the disease by environmental controls. The medical profession was in a position to observe first hand that vellow fever patients, removed from the original site of their sickness, did not infect their attendants, and thus the doctors tended to support the environmental thesis. There was, however, no unanimity within the profession, and leading physicians could be found on both sides of the question. The public, long conditioned to communicable disease and aware of the presence of vellow. fever in the West Indies, strongly favored quarantine measures, but was not averse to sanitation. Municipal and state officials, torn between the pressure from the quarantine faction on the one hand and the advocates of sanitation on the other, usually sought to please everyone by adopting both quarantine and sanitary measures.

No better evidence of the public attitude can be found than in 1793 when yellow fever was ravaging Philadelphia. Fearful that the City Council was not taking strong enough measures to exclude the disease from New York, on September 13 a voluntary

citizens' committee was organized. This group, which included Drs. Samuel Bard and Malachi Treat, immediately took upon itself the authority to employ Drs. Buxton and Irwin to assist the Health Officer in his duties—duties which consisted solely of examining incoming vessels suspected of harboring disease. It then hired inspectors and stationed them at the wharves and ferries to prevent the landing of anyone from Philadelphia. After having taken this action, the citizens' committee sent representatives to confer with the Mayor and Council. Rather than taking umbrage, the City Council legitimized the citizens' activities by establishing a seven-man committee of its own to cooperate with them and invested the resulting joint body with full power "to do everything which may become necessary...."

The Health Committee, as it was called, immediately established a rigid quarantine around the city. A small boat was hired to help the Health Officer intercept incoming vessels, an appeal was made to citizens to establish local patrols along the wharves and slips, and arrangements were made for an isolation hospital on Governor's Island. When French vessels were reported to be picking up people from the Jersey shore and bringing them to New York, a delegation from the Health Committee visited Citizen Edmond C. Genèt, the representative of the French Republic, and were promised that the practice would stop. When it became evident that refugees from Philadelphia were still eluding the quarantine, on September 22 the Committee organized citizens' night watches consisting of seven men in each ward to patrol all landing areas, A few days later the Health Committee published a broadside warning against any goods coming from Philadelphia. All writers are agreed, the Committee wrote, that infectious diseases are transmitted by linen, silk, wool, or cotton goods and by any cargo loaded in an infected port. All baggage and other cargoes must be unloaded, purified, and ventilated for at least forty-eight hours. Clothing was to be "smoaked with the fumes of brimstone [sulphur] for one day,"2

Early in October the Committee successfully appealed to the City Council for 24 additional watchmen to augment the patrols already established, and it appointed one John Hillyer to superintend the airing and fumigation of incoming goods. As the epidemic subsided in Philadelphia, the Health Committee began re-

leasing its employees, but maintained a limited embargo against that city until the end of November. On December 18 the Committee, after reporting that it had spent £3,488:14:6 (about \$15,500, \$3,000 of which had been sent as a gift to Philadelphia), voted to adjourn. Before doing so, a report of its activities was sent to the Governor and a request was made that the state reimburse the city for its expenditures.³

The primary aim of the Health Committee was to break all communications with Philadelphia, a goal which illustrated the faith of the general public in the doctrine of contagion. Moreover, in its final report to the Governor, the Committee urged that a more effective quarantine law be enacted. The State Legislature responded on March 27, 1794, with a law that extended the quarantine act to include all vessels entering New York, provided a salary of approximately \$5,000 for a health officer to inspect all incoming ships, made Governor's Island the official quarantine station, and authorized the Governor to creet buildings there for the reception of infectious disease cases.⁴

After its final session in December of 1793, the Health Committee met only once in the following April, and then took no further action until August 26, 1794. Four days earlier, Governor George Clinton, apprehensive over the danger from yellow fever, had issued a proclamation prohibiting vessels from New Orleans and the West Indies from coming into New York without the permission of the Health Officer. At the same time, the Governor officially appointed the same fourteen-man Health Committee which had served so well the preceding fall. The Health Committee now became an official agency, and, as such, was the fore-runner of the Health Office, established two years later. Like the Health Committee, its chief role was the administration of quarantine regulations.

Although the Health Committee's quarantine was not so rigid as in the previous year when the threat was close at hand, it took every reasonable precaution. For example, on September 6 the Committee ordered that stagecoach drivers give the name and place of origin of every passenger under penalty of forfeiting their right to come into New York City. Whether or not the Governor ordered the erection of a hospital on Governor's Island

is not clear, but in any event the Health Committee decided it needed an isolation hospital. A subcommittee, appointed to look for a suitable location, recommended that the City Council take over the Bellevue estate, and on September 12 an agreement was reached with a Mr. Nicholas Denise to rent the property. Within a few days, a hospital was in operation, complete with a steward and a matron.⁵ This year, too, the stern quarantine measures seemed to keep the disease at bay, and the Committee adjourned in December well content with its efforts.

Having been reappointed by the Governor the previous summer, the Health Committee felt more confident of its authority, and in February of 1795 it resolved to take charge of Bellevue for another year. The following April it issued a broadside warning that a malignant fever was present in the West Indies and ordering pilots to keep vessels arriving from there a quarter mile away from the docks until cleared by the Health Officer and the Committee. The Committee continued to meet until July, when its members began having qualms about their legal status. On conferring with Governor John Jay, they were assured that their authority was unimpaired. At the beginning of August, after it became evident that yellow fever was active in New York, the Committee once again placed Bellevue in operating condition and took charge of all health matters for the city.⁶

On August 8 the Health Committee approved publication of an Address to the public. This statement assured citizens that the few cases of yellow fever were safely isolated and that there was no cause for alarm. It declared that only eight deaths from the fever had occurred since July 20, but that the "number of persons killed by the imprudent use of Cold Water has been remarkable," and laborers in particular were warned to be cautious in its use. Doctors were urged to report all suspicious fever cases, and the public was asked to assist in reporting these cases. After recommending moderation and cleanliness, the Address stated: "The cleanliness of the Streets, Yards, Cellars, & Markets & the removal of all putrescent matter are objects of very great importance and ought to be particularly attended to—especially in those parts of the City which are contiguous to our Eastern Rivers." This statement is significant, for it is the first time that the Health Commit-

tee had laid any stress upon internal sanitation. Up to this time its efforts had been directed almost exclusively toward isolation and quarantine.⁷

The Health Committee members could scarcely have been unaware of the debate raging in the medical world over the nature of yellow fever, and their decision to recommend sanitary measures as well as isolation undoubtedly reflected the changing public attitude. Henceforth, virtually every committee appointed to study this issue sidestepped the medical controversy by advocating both sanitation and quarantine. During the two previous years a rigid enforcement of the quarantine laws had sufficed to keep the disease out of New York City, and the Health Committee had no reason for further action. In 1795 the quarantine proved ineffective, and there was little choice but to consider the possibility of domestic causation, or at least the likelihood that environmental conditions favored the spreading of the disease. The fine job of the Health Committee in dealing with the yellow fever epidemic of 1795 has already been told in the previous chapter. Starting as a volunteer citizens' committee, the Health Committee had developed into an agency of the municipal government. In the process, it had established the principle of civic responsibility and had demonstrated the feasibility of governmental action in the public health sphere.

Relatively early in its history, the New York City Council had assumed some responsibility for health matters in time of epidemics. The calamitous events of the 1790s, however, gradually pushed the city officials into creating a more permanent form of health administration. Pressure from alert citizens, as already noted, was one factor in this development, but just as important were the efforts of the Medical Society. Early in 1796 the Society warned the Council of what it felt were predisposing conditions toward sickness which should be corrected before the appearance of the summer fevers. The "intolerable stench" around the wharves and docks, the putrefying matter exposed on lots and streets, and the filthy conditions to be found around slaughterhouses, tanneries, and other "noxious" trades were all cited as dangerous to health. The Council referred these recommendations to its Health Committee and, upon the advice of this body, ordered

the Society's report to be published and petitioned the State Legislature for authority to put the recommendations into effect.8

The Legislature complied with the city's request in April of 1796 by enacting a law creating a permanent Health Office. The first ten provisions of the measure dealt primarily with the quarantine system and the health commissioners, whose duties related to it. A practicing physician was to be appointed Health Officer, and "several persons shall be appointed commissioners of the health office of the said city. . . ." All vessels carrying 40 or more passengers with sick aboard or coming from an infected port were required to perform quarantine, but the Governor was given discretion to extend the quarantine. The Health Officer was to receive an inspection fee of £3 from each foreign vessel and 32 shillings from each domestic ship. The Governor was authorized to erect a lazaretto (pesthouse) at a suitable place. The rest of these provisions specified how the lazaretto and quarantine grounds should be managed. A significant provision, but one that does not appear to have been enforced, required physicians, under penalty of \$50, to report to the Health Officer the name of any patient suffering from an infectious disease.

The last sections of the law authorized the Mayor and Council to pass ordinances and rules with respect to filling in lots, cleaning the streets, alleys, yards, and cellars, controlling obnoxious trades, and removing nuisances. None of these ordinances, however, could remain in effect for more than one year unless specifically approved by the Governor. Moreover, the city was required to compensate the owners of obnoxious establishments if they were required to move. Shortly after the act was passed, the new appointments were made and the Health Office began functioning.⁹

Just as the new health commissioners were appointed, the City Council showed its desire to cooperate by reestablishing its own Health Committee. The new chairman, Mr. John Murray, politely asked for the assistance of the Medical Society. The Society's president, Dr. John Charlton, agreed to the request, but asked what specific information was required. "My motive for this request," he explained with a touch of sarcasm, "is that early . . . last winter, the Medical Society were at the pains of pointing out to

the Corporation of the City the precautions which to them appeared indispensably necessary to the prevention in the future of a Calamity similar to that we experienced last summer and autumn, not an article of which (I believe) has been attended to." Dr. Charlton was a little harsh in his criticism. The Council, as noted, had already petitioned the Legislature for further health legislation and set up its Health Committee. Subsequent to its enactment, the Council ordered publication of the new health law and instructed the aldermen and assistants to examine the streets and lots in their respective wards and make recommendations for the removal of nuisances.¹⁰

Part of the City Council's difficulty lay in the cumbersome nature of the democratic process, complicated in this case by the inability of the medical profession to agree upon a health policy. Another impediment to an effective health program was the division of authority between the city and the state. As specified in the health law of 1796, health ordinances of the City Council were invalid after one year unless approved by the Governor. An even greater source of difficulty was the reluctance of the City Council to exercise the relatively limited powers given to it by the State Legislature. Even when given authority to remove nuisances, city officials were hesitant to pass a general ordinance, preferring to enact a separate one to fit each specific case. For example, in July of 1706, on the recommendation of one of the health commissioners, the Council passed an ordinance "for removing certain Articles of Dirt & Filth collected for the purpose of Manure & deposited on a Piece of Ground . . . in the seventh Ward."11 The net effect was that administrative action moved at an exceedingly slow pace. The aldermen and assistants, like all elected officials, were subject to many pressures, including those from personal relationships. Thus they frequently tolerated unsanitary conditions until enough public pressure was brought to bear. Even then, they could only bring the matter before the City Council. The Council would refer it to its own Health Committee, or the Health Office, which, in turn, would make recommendations to the Council.

That the system worked at all is largely due to a few able officials. John Broome, one of the chairmen of the city's Health Committees, and John Oothout, an outstanding health commissioner, were conscientious and capable individuals. Dr. Richard Bayley, the Health Officer who took over after the death of Dr. Malachi Treat, was another first-rate official. Bayley was Health Officer in the summer of 1796 when, at a time when yellow fever was much apprehended, a shipload of 450 Irish immigrants arrived in the harbor. Bayley advised the Council that for the sake of both the immigrants and the health of the city, it would be best for the ship to remain in quarantine for some weeks, and suggested that the city supply the passengers with provisions during this time. The Council reluctantly voted \$800, but asserted that in the future, the owners and masters of such vessels should be liable for maintaining passengers in quarantine.¹²

This was the situation when the Health Office was established in 1796. The newly appointed health commissioners felt that their first concern was to establish a lazaretto for the quarantine station. The law had specified that the lazaretto was to be constructed on one of the islands in the harbor, but temporarily the Health Office took control of Bellevue. Construction of a hospital on Bedlow's Island was started immediately, and on September 5 the health commissioners were able to inform the Council that this lazaretto, or pesthouse, was ready. The opening came at a good time, since a mild fever outbreak was just getting under way. Bellevue was again used as a lazaretto in the summer of 1707, but it was understood that fever cases would be transferred to Bedlow's Island the next year. However, in the spring of 1798 the danger of hostilities with France led the health commissioners once more to ask for and receive permission from the City Council to use Bellevue instead of Bedlow's Island, since the latter was scheduled to be fortified. 13

In the meantime, the health commissioners had organized their work, and by the spring of 1797 were prepared to take all necessary steps to maintain the city's health. On March 20 they requested the Mayor to appoint a standing committee of the Council to advise and cooperate with them. A three-man committee was immediately appointed, to which most of the Council's health matters were referred. This standing committee was another step toward a specialized health administration, but whatever it may have foreshadowed, the committee made possible a high degree of cooperation between the Council and the Health Office. When

the health commissioners submitted a list of nuisances to the Council in April of 1797, a member of the standing committee was instructed to see that they were corrected. In May when the health commissioners reported that it was "necessary to employ four decent & discreet Men to attend to the prompt execution of the Laws & Ordinances for cleaning the City and also four laborers to sweep & collect the Dirt & Filth . . . and also to hire two permanent Places for depositing the Dirt . . . ," the Council without hesitation voted the necessary funds. A month or so later, when the health commissioners asked for two additional men and requested that a number of public toilets be built, the Council again complied. John Oothout, already mentioned as an exceptionally capable health commissioner, kept a constant stream of reports going into the Mayor's Office. By and large, the city administrators made a sincere effort to cooperate with the health officers and to correct all abuses drawn to their attention.14

Although appointed by the state, the health commissioners were dependent upon the city for a good share of their expenses, particularly those which related to the sanitary condition of New York. In December of 1797, the Health Office submitted a statement of its finances to the Council. The latter body approved the accounts, although noting "that they consider the Charge made by Mr. Dodge of 24/ [shillings] for a Coffin as exhorbitant." As an expression of confidence, the City Council directed that the balance of £ 197: 3:5 be left in the hands of the commissioners. ¹⁵

An amendment early in 1797 sought to make the Health Office more effective by limiting the number of commissioners to three appointees plus the Health Officer. In addition, the authority to pass and enforce ordinances relating to nuisances, which had been given to the Common Council, was now turned over to the Health Office, subject to a veto by the Governor. The amendment further prohibited certain noxious trades from particular sections of the city, although the effectiveness of this restriction was reduced by a subsequent amendment which exempted soap and candle manufacturers from the provisions of the act, and permitted starch manufacturing in certain sections of the city. ¹⁶

In 1798 all previous health laws were repealed and a new law was passed. The organization of the Health Office with three commissioners remained essentially the same, but reflecting the growing public confidence, its powers were considerably broadened. The commissioners were authorized to make sanitary regulations and, if necessary, to enter premises and remove all nuisances. In this latter case, the commissioners were first required to give the property owner a written notice. If the owner refused to cooperate, the commissioners could then apply to the Mayor for a warrant and perform the task themselves, assessing the property owner and charging him with a misdemeanor. The quarantine provisions of the earlier acts were renewed and strengthened, with wider powers and more discretion being given to the Health Officer. His fees were set at \$7.50 for foreign vessels and \$4.00 for doniestic. The Health Officer was provided with a permanent source of income by a provision requiring the captains and cabin passengers of all vessels entering New York from a foreign port to pay a one dollar head tax and the crews and passengers to pay 50 cents each.17

Almost at this same time, the Legislature, in response to a petition from the City Council, passed a law authorizing the city to regulate the construction of piers and wharves and, where necessary, to compel property owners to conform to these regulations. The haphazard construction of piers was obstructing the ebb and flow of the water, with the result that the endless streams of night soil, garbage, and rubbish being dumped from the docks and wharves was creating an unbearable atmosphere along the waterfront. The new measure made it possible to give some relief, but it provided no real solution to the problem.

The year 1798, the most disastrous yellow fever year in New York's history, demonstrated that the failure of the health officials to prevent the disease was not from want of a conscientious and sincere effort. The Health Office, operating under its new and broader powers, began taking preventive measures early in the spring and it was given full cooperation by the Mayor and City Council. Whether the health commissioners were requesting new regulations or asking for the performance of specific tasks, the Council invariably complied. If, as occasionally happened, the Council found it inexpedient or inadvisable to grant the request, the members usually provided an alternate solution. For example, in May the commissioners asked that one of the slips be filled in. Since at this time petitions were submitted to the Council oppos-

ing this action, the Council solved the problem by resolving to have the mud dredge clean out the slip as quickly as possible. During the spring and summer, the health commissioners requested action on a wide variety of sanitary matters—stagnant water, foul smelling slips, clogged sewers, and the prosecution of a number of individuals accused of violating the health laws.¹⁹

Despite all precautions, yellow fever appeared late in July and slowly gained ground in August. It may have been this threat which led one citizen to write an indignant letter to the Commercial Advertiser charging the health commissioners with negligence. He accused them of "unwarranted neglect" in failing to prevent the "sale of spoiled meat, spoiled fish and spoiled fruit in the Fly-market, almost every hot day this season." He asserted that they had permitted a vessel to remain in one of the slips for several weeks with "a quantity of damaged coffee or something equally noxious, in her hold. . . . " Finally, he wished to know why the Health Office did not have enough inspectors to do a proper job. He concluded his letter, however, by singling out Commissioner John Oothout for his conscientious public service. The editor of the newspaper, in defending the health commissioners, declared: "We are confident that the citizens in general are well satisfied with their conduct, and that no danger awaits the city from their neglect." The city, he added, is generally clean "and we all rejoice in the general health of the citizens."20

Had the editor been able to foresee that 2,000 New Yorkers would die of yellow fever within the next few weeks, he would scarcely have been so confident. Nor is it likely that he would have protested against the stringency of the quarantine restrictions as he did in his August 22 issue. The quarantine restrictions, he wrote, were unnecessarily strict and "exercise a most unwarrantable tyranny over the merchant." The real danger was not from the presence of sick individuals on incoming ships but rather "from the destructive air generated in their holds in hot weather, by the fermentation of perishable substances—a danger much increased by keeping vessels at quarantine in hot weather." He proposed that the public health would best be served by immediately unloading all sick passengers and sound cargoes. Fortunately, the quarantine officials paid no attention to the editor's suggestions, but they were still unable to prevent the introduction of the fe-

ver. The attitude of this newspaper editor shows first the reluctance of the commercial interests to accept quarantine measures, and second the wide diversity of opinion as to the etiology of the disease which the quarantine was supposed to exclude.

With the reorganization of the Health Office in 1798, the City Council had not felt it necessary to appoint a health committee of its own. However, as the death toll began to soar early in September of 1798, a temporary Health Committee, consisting of five aldermen and two assistants, was appointed.²² The Committee was given broad authority to provide for the sick and poor, and, as shown in Chapter 5, was largely responsible for minimizing the impact of this devastating epidemic. It did not—and was not intended to—assume any of the functions or duties of the Health Office, since it was essentially an emergency committee.

In November, while the events of the frightful epidemic were still fresh in mind, the City Council appointed a special committee, consisting of Alderman Gabriel Furman, Dr. Richard Bayley, and Dr. William Hammersley to investigate the causes of the recurrent epidemic fevers. Almost simultaneously, the Medical Society, the Chamber of Commerce, and the Commissioners of Health began similar studies. The City Council, on becoming aware of this, instructed its committee to confer with the representatives of the other organizations, and on January 21, 1700, a joint report was submitted. This rather lengthy report concentrated almost exclusively on the domestic causes of the fever, indicating that the sanitationists must have dominated the group. Almost every aspect of sanitation was considered. Listed among the general factors contributing to the spread of disease were damp cellars and sunken lots, in which putrefying matter was compounded by the presence of stagnant water; unfinished water lots, which periodically flooded; foul smelling slips; and improperly constructed and overflowing sinks and privies. The report also condemned burials within the city proper during the hot months; narrow streets which prohibited the free circulation of air; sailors' boarding houses and "Tippling Houses," where drunkenness and debauchery fostered disease; the excavation of filled-in land during the summer months; and the miasma generated by dried and pickled fish, salt beef and pork, and imported hides and skins. Of the latter, the report declared that the exhalations from

putrefying provisions are "not only calculated to spread disease, but from the most unequivocal evidence, did produce it in the course of the last season."

Not content with merely pointing out hazards to the public's health, the joint report also suggested specific remedies. Damp cellars and lots, it stated, could only be eliminated by empowering inspectors to enter suspected buildings and grounds to see to it that nuisances were eliminated. To solve the problem of water lots, it advised that owners be compelled to raise the ground level or that it be done by the city. With respect to obnoxious slips, the report suggested that they be filled in or rebuilt, with the city paying one-third of the cost and the rest assessed against the adjoining property owners. The deplorable condition of privies required that they be put into good order and that henceforth the construction of new ones be strictly regulated. The only permanent solution, however, was for the city to build an underground sewer system. Burials in the city cemeteries should be at least six feet in depth. No filled-in land should be disturbed from June 1 to October 20, and the storage of pickled or salted food should not be allowed in densely settled areas of the city. Near the conclusion of its recommendations, the report asserted that "a plentiful supply of fresh water" was "one of the most powerful . . . means of removing the causes of pestilential diseases," and it recommended that the city immediately make plans for a water sys $tem.^{23}$

Over and above these specific recommendations, the joint committee generalized upon the impact of public health regulations on individual liberties, and the changes which a strong public health policy would bring about in the role of the municipal government. In noting that many of the proposed reforms "must necessarily be productive of much inconvenience to many of their fellow citizens," the committee members assured them that in considering measures "calculated to promote the public good, they have as far as was consistent with the nature of their researches, been extremely cautious of interfering with the interests of individuals." The committee members recognized that they had "recommended great and strong power to be vested in the Corporation; but they do not believe any thing short of it will restore this city to its former healthy state. The sources of the afflicting pesti-

lence," the report continued, "are of too local a nature, to expect their removal without a strong discretionary power being somewhere lodged by the State Legislature." In asking that the city be given more power and authority over health matters, the joint committee was also asserting that public welfare was more important than individual property rights. The committee took another radical step when it insisted that, in order for garbage and filth to be removed quickly, the city must hire enough carts and laborers to do the job. Whereas individual citizens had been held responsible for the condition of the streets up to this time, the joint committee was now proposing that street sanitation be a city responsibility, for which the community at large should assume the expense.²⁴

Within two weeks after the joint report was submitted, the City Council drafted a bill for presentation to the State Legislature embodying virtually all of its recommendations. The Legislature, recognizing the need for immediate action if the proposed changes were to be put into effect before the approach of another fever season, promptly enacted the bill into law. Under this measure, the City Council was authorized to make by-laws regulating virtually every nuisance mentioned in the joint report-sunken lots, damp cellars, foul slips, inadequate privies, burials, and so forth. In addition, the law authorized the Council to appoint one or more inspectors of lots to superintend the execution of these regulations. On April 10, acting under its new authority, the City Council appointed Aldermen John Bogert and Richard Furman, two street commissioners, to serve as inspectors of lots. The instructions given to the two men were to carry out all laws and ordinances for "the cleansing of the City and promoting the Health thercof."25

As the two inspectors of lots began examining the sanitary conditions of the city, they were horrified to find some slum housing erected on such small plots of ground that no space was available for privies. The lots were described as so small "as to deprive such buildings of the free circulation of the air and to compel the occupants of them to make the cellar or other parts thereof receptacles of filth and dirt." However morally remiss the property owners may have been, they had committed no breach of the law; hence the city decided that the simplest solution was to buy the

land and destroy the buildings. An appeal to the Legislature resulted in an act passed on April 4, 1800, authorizing the city to buy the offending properties at a fair valuation. The law, however, applied only to specific buildings on Moore and Broad Streets near the Exchange Slip and certain others on Front and South Streets near the Fly Market. This first slum clearance project is still another indication of the growing sense of responsibility manifested by city officials, and emphasizes, too, Dr. George Rosen's thesis that a good part of nineteenth-century social legislation arose from health needs.

Since prevention was infinitely better than eradication, the following year the city petitioned the Legislature for the right to regulate all construction within the city. In April of 1801 the city was authorized to appoint two or more surveyors whose duties were to see that the streets, buildings, wharves, and slips were laid out and constructed in a uniform manner. All new buildings were to be erected according to the regulations laid down by the City Council, and the surveyors could require property owners to correct or improve existing structures. If the property owners refused to comply, the city could have the work done and issue a lien on the property. The city was also given the power to make common drains, sewers, and vaults; to regulate the paving, altering, cleaning, and scouring of streets; and to make "a general regulation in any part of the said city for raising, reducing, levelling or fencing in any vacant or adjoining lots. . . . "26 While laying the basis for a city building code, the Legislature, at this same time, laid down certain rules "for the more effectual Prevention of Fires, . . ." Buildings in the lower part of Manhattan henceforth were to be constructed of stone or brick and the roofs, except for porches, were to be covered with tile or slate. The existing buildings, however, were exempt from these provisions.

Armed with new authority and strengthened by the creation of street commissioners, inspectors of lots, and surveyors, the municipal government proceeded to take full responsibility for sanitary conditions, leaving the health commissioners free to concentrate upon their primary duty, that of administering the quarantine program. A series of legislative enactments during these years steadily strengthened their hands. While the joint committee was concentrating on the domestic causes of yellow fever late in 1798,

another committee was studying ways to prevent the importation of the disease. Its findings were embodied in a new quarantine act passed on February 25, 1799, just a few days before the law empowering the city to deal with sanitary conditions. The quarantine law provided that the Health Office be managed by a board of three health commissioners, consisting of the Health Officer of the port, the Resident Physician, and one other commissioner, all to be appointed by the state. The Resident Physician was to receive a salary of \$1,000 and the other commissioner, \$500. The quarantine station was to be moved from Bedlow's Island to "the easterly part of Staten Island." Here a Marine Hospital was to be erected to replace the old lazaretto on Bedlow's Island. In the meantime, an appeal had been made to the federal government to establish a pesthouse and build a wharf and warehouses for quarantined goods near this location. Congress responded with an act which required all United States officials to observe state health laws and remove customs and other offices to safer places during epidemics, and which authorized the crection of the requisite warehouses. The year after the removal of the guarantine station to Staten Island, the state coded Bedlow's, Oyster, and Governor's Islands to the federal government.27

On April 7, 1800, the quarantine law was again amended. The new measure provided that any vessel arriving from a port where "malignant or pestilential fever prevailed" or on which a death from fever had occurred enroute must, at the request of the Health Officer, be unloaded, purified, and cleansed under penalty of \$500. Any vessel arriving during the period, June 1 to October 1, could, at the discretion of the Health Officer, be required to purify all of its clothing, bedding, and cargo. The costs for this "purification" were to be borne by the shipowners. No damaged coffee, cotton, hides, or furs could be brought into the city during the warm months, nor any sound coffee or furs without the consent of the Health Officer. To avoid delay during the critical summer months, the Mayor was authorized to make temporary appointments to the Health Office in the event of the death or resignation of any of the commissioners. This was an important amendment, since the mortality among health officers was high during these years. A change which undoubtedly helped the Health Office and the commissioners was a provision that they,

rather than the wardens of the port, should collect the head tax from crewman and passengers. In addition, a 50 per cent increase in the tax raised it to \$1.50 for captains and cabin passengers and 75 cents for crewmen and steerage passengers. The health commissioners were authorized to keep 5 per cent for themselves, the other 95 per cent was to be used to defray the expenses of the Health Office. The following year still another act "to provide against infections and pestilential diseases" was passed. The provisions closely followed those of the 1799 and 1800 laws except that the percentage which the health commissioners were permitted to keep was reduced from 5 to 2.5 per cent.²⁸

Although yellow fever cases continued to appear in New York, the disease did not reach epidemic proportions again until 1803. This in no way diminished the work of the health commissioners, for, in addition to being constantly on guard against the danger from yellow fever, they found their hands full with the constantly increasing stream of immigrants pouring into New York. The standard practice of shipmasters and owners was to jam as many passengers into the shipholds as possible and carry only minimal supplies of food and water. During the long voyage, typhus, or ship fever, was often present and enteritic disorders were certain to sweep through the passengers. The arrival of one or more immigrant vessels almost always filled the Marine Hospital to capacity.

In describing the hospital facilities for the quarantine station, Dr. Bayley wrote that there were seven buildings with accommodations for 200 patients. In the seven months between May 1 and December 1, 1801, no fewer than 945 sick had been admitted. At the beginning of this time, the accommodations were so poor that tents were used to house the sick. On another occasion, the buildings designed for healthy passengers undergoing quarantine were turned over to those hospitalized. In the spring of 1802, at a time when the Marine Hospital was overflowing and many patients were being treated in tents, the Health Office asked the City Council for permission to use Bellevue Hospital. The Council refused this request, but it did appropriate \$1,500 for new buildings and arranged to care for the sick in the wards of the New York Hospital. In general, the City Council proved cooperative and maintained good relations with the Health Office. However, since

the Council was responsible for part of the financial support of the Health Office, it was only natural that members of the Council should seek more information about health matters,²⁹

It may have been this feeling which led the City Council in 1802 to appoint a special committee to recommend ways to best preserve the city's health. The committee reported its findings on July 26. The members opened their report by stating that they had no intention of passing judgment upon the two basic yellow fever theories, since they felt that both had some merit. Concerning the importation theory, they noted that, since the quarantine officers were state appointees, an investigation by the city might be considered "improper." Nonetheless, they intended to make a strict inquiry to determine whether the quarantine laws were punctually and strictly enforced. After citing the extensive powers granted to the health commissioners, the report pointed out that these powers were meaningless unless the necessary funds were provided. The financial support for the Health Office, however, came largely from the city, and there had been a lack of cooperation between the Health Office and the City Council. It had been proposed that the City Council appoint a health committee to work with the health commissioners, but this would serve no useful purpose, for the two bodies "without advising and communicating with each other would inevitably produce Confusion. Their regulations would clash, their directions might be opposite. The one depending upon the other would occasion inactivity in both."

To avoid the danger arising from two separate agencies, each duplicating the other's functions, the committee suggested the formation of a standing committee of the Council whose members would sit together with the Commissioners of Health and function as one board. The recommendations of this newly constituted board would then carry the same weight as those from a committee of the City Council itself. "Uniting the medical knowledge and experience of the Commissioners of Health, with the authority of this board," declared the committee report, "would inspire confidence in the minds of the Citizens."

Impressed with the logic of this report, the Council ordered that if it was agreeable with the Commissioners of Health, "the Mayor, Recorder, Mr. Gilbert, Mr. Brasher, and Mr. Ten Eyck,

together with the said Commissioners, shall form a Committee for the preservation of health in this City."²⁰ This decree created what was in effect a board of health for the city. Rather curiously, no mention was made of the need for renewing the Health Act of 1799 which had bestowed authority upon the city to regulate sanitary conditions. As originally passed in March of 1799, the law, considered an emergency measure, was given a three-year limitation. Apparently the law had been quietly allowed to expire on March 30, 1802. The creation of the joint committee about this same time, however, may indicate that the City Council continued to exercise jurisdiction even though without full legal authority.

The following January, 1803, the Council appointed a new health committee and in May ordered its members "to unite with the Commissioners of the health office in such measures as may be necessary for the preservation of health in this City." One of the first acts of this new body was to draw the attention of the Council to the fact that the Health Act of 1799 had expired the previous March and to suggest that it be reenacted. A petition was immediately submitted to the Legislature, which responded by passing a new law on April 2. This act repeated the essence of the previous law, but added several new and important provisions.³¹

One of the most significant of these pertained to the collection of vital statistics. John Pintard, as already noted, had begun collecting mortality statistics for New York City during 1802 and had published his findings in *The Medical Repository*. His figures showed "consumption" to be the leading cause of death, with "Fits," measles, and smallpox following. In evaluating his findings, Pintard stressed the need for official mortality statistics. "The public mind," he wrote, "accustomed to weekly reports, becomes less agitated and alarmed at the sound of death," and physicians, "informed of the endemic diseases of our climate, can more effectually devise an antidote." Beneficial as weekly bills of mortality would prove, he pointed out, they would be much more effective if correlated with birth and marriage statistics.³²

Pintard's appeal came at the right time. Among informed citizens there was a rising consciousness of the need for statistical information, and the long series of yellow fever epidemics had created among New Yorkers an unprecedented awareness of public health needs. Section VII of the Act of April 2, 1803, directed all

physicians and surgeons to leave a signed note with some member of the household in the event of a patient's death. The note was to give the name, "apparent age of the deceased, and the disease of which he or she shall have died." Failure to comply subjected the attending physician to a fine of \$50. Sextons were to require presentation of the physician's statement before burial. If no doctor had attended the deceased, the sexton was to obtain the required information from the family and record it in an official record book. Negligence on the part of sextons would make them liable for a fine of \$25.33

The effectiveness of the joint committee, comprised of health commissioners and city officials, was put to test during the summer and fall of 1803 when over 600 persons died from yellow fever. On this occasion the Health Committee undertook not only sanitary and medical measures, but also acted as a general welfare agency, providing temporary housing for the poor who fled from the city and medical care and provisions for those who remained. Members of the City Council, even those not associated with the Health Committee, were equally assiduous in promoting cleanliness and sanitation. For example, on August 1, just as the presence of yellow fever was becoming known, the aldermen in the Second and Third Wards complained that certain lots were "in a state of dangerous nuisance." Just a month earlier the Council had indicated its concern over this subject by appointing nine inspectors of lots, and in this instance it moved immediately to rectify the situation. Since the state-appointed health officers played a major role in the city's health, the Council was anxious that good men be named to the positions. When Dr. Isaac Ledyard, the Health Officer, died late in September, the municipal officials addressed a resolution to the Council of Appointment, stressing the importance of this office, and recommending Dr. Joseph Browne as Ledvard's successor.34

As invariably happened after a serious epidemic, the City Council appointed a committee in December of 1803 "to devise the best plan for discovering and correcting nuisances in the city." The ensuing report, which was submitted by Chairman Wynant Van Zandt, Jr., on January 3, 1804, referred to the debate concerning whether yellow fever was imported or of domestic origin, but, like preceding committee reports, dismissed it by saying

that the city should operate upon both theories. While conceding the possibility that the disease was introduced from abroad, the major stress was placed upon the need for better sanitation. The members of the committee found that "nuisances of various Kinds do exist in a most alarming degree, . . ." They proposed that inspectors be appointed in each ward "whose duty it shall be to inspect with the most scrupulous exactness every dwelling-house, store or other building, cellars, vaults, vards, privies, watercourses, and all other objects, which now are, or hereafter may be likely to become nuisances." These inspectors were to be furnished with books in which to keep an exact census of all buildings and occupants within their respective districts and to record the condition of each. They were also to inspect all streets, drains, sewers, docks, and slips and make written comments about existing nuisances and any conditions likely to produce trouble in the future. In conclusion, the report pointed out that the city officials must have strong powers for enforcing any new sanitary ordinances, for without this authority, the ordinances "must fail of the desired success."35

The Council accepted the report and ordered Chairman Van Zandt to draw up an ordinance embodying the main provisions. Three days later, a city ordinance was promulgated under the heading, "A Law for the more effectual prevention of Nuisances." It provided for the appointment of two "Inspectors of Lots" in each of the seven city wards at a salary of \$3.50 per day. Their duties were identical with those set forth in the original report. The books, in which they were to keep a record of the condition of all buildings and property, were to be presented to the Council at least once a week, and the inspectors were "to make report from time to time of such nuisances existing or apprehended as may in their judgment call for immediate correction." Any person impeding the inspectors in their work, that is, refusing them admittance to buildings or cellars could be fined \$50. On January of the City Council appointed the fourteen inspectors, and the list of names leaves little doubt that the Council intended to enforce the law. Among those appointed were John Oothout, whose zeal as chairman of the Health Committee has already been noted; George Gosman, later to become the first city inspector; and John Pintard, Gosman's successor.36

In the meantime, another group, consisting of representatives of the Chamber of Commerce, the health commissioners, and the Health Committee, was studying the operation of the quarantine law to see how it could be improved. Its members recommended that between June 1 and October 1 no vessel from an infected port or with sick passengers or crewmen aboard be permitted to come nearer the city than the quarantine ground, and that between June 1 and November 1 no vessel from the West Indies, the Mississippi River, South America, the Mediterranean, Africa, Asia, or any port in the United States south of Charleston, South Carolina, be permitted to anchor within 300 yards of the city. These recommendations were accepted, passed on to the State Legislature, and incorporated into the quarantine law. With a strong sanitary law in the hands of capable officials and an effective quarantine system, New York was well prepared for the fever season of 1804. Even without knowing the role of mosquitoes in the spread of vellow fever, the extensive preparations made by the city and state officials had guaranteed that the disease would never again rayage the city as it had in 1709.37

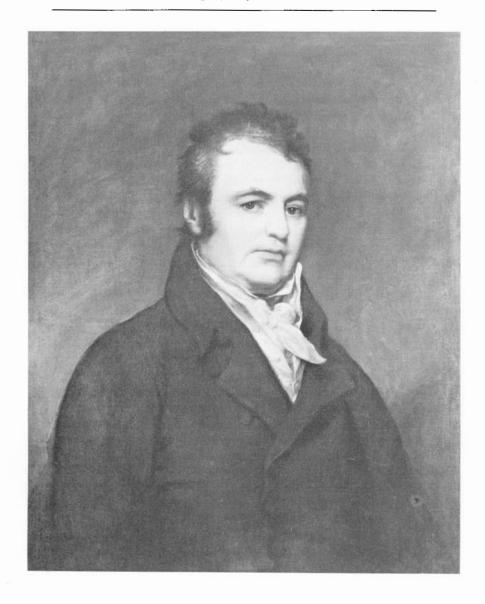
It is impossible to read the Minutes of the City Council in 1804 without being impressed by the zeal of the inspectors and the support given by the Council. The inspectors were constantly reporting unsanitary conditions, and in every case the Council took immediate action to eliminate the trouble. The chief weakness of the system was that the inspectors had no power to act upon their own authority, and the City Council felt it necessary to legislate separately on each matter brought to its attention. As long as yellow fever was an immediate threat and the members of the City Council were conscientious, the system worked fairly well. However, as the city's population increased and the duties of the Council grew commensurately, it soon became impossible for the councilmen to give personal attention to every little detail.

It may have been recognition of this fact that led the City Council to create a new and important office in the spring of 1804, that of City Inspector. The original resolution establishing the position on March 19 stated that the holder of this office should gather information about public nuisances by personal observation and from the inspectors of the lots and "prepare and present to this board from time to time and without delay the drafts of

Ordinances necessary to remove or correct such nuisances in the most expeditious and useful manner. . . ." The salary was identical with that paid the regular inspectors, \$3.50 a day. On this same day George Gosman, one of the lot inspectors, was appointed City Inspector, and another of the lot inspectors, James Hardie, was named as his assistant. Hardie's duties were to see that any ordinances passed by the City Council were "served and carried into immediate effect." A week later Gosman resigned and his position was assigned to John Pintard. The choice of Pintard could scarcely have been better, for under his leadership the office of City Inspector gradually assumed more responsibility and became a key administrative unit insofar as public health was concerned.³⁸

Since the crowded boarding houses and taverns along the waterfront had long been considered a source of fever and disease, on June 25 the City Council resolved that the City Inspector should have full power to examine all such places and make any regulations, with the approval of the Council, "as may be most conducive for the preservation of the health of said City. . . . " A month later two physicians wrote to the City Council on the subject of improving the collection of the mortality records. Their letter was referred to the Health Committee, which endorsed the physicians' ideas and proposed revising the existing law. The basic provisions of the new ordinance, which was enacted a week later, were identical with the act passed in April of 1803: physicians were to write a death certificate; sextons were to require a death certificate or else gather the information from the family of the deceased, and so forth. In addition, the sextons were required to send in weekly returns to the City Inspector's Office, and the City Inspector was required to publish a weekly list of all deaths. Finally, the City Inspector was to keep a register of the names of all deceased persons and to compile an annual report of all deaths within the city.39

Since Pintard had been keeping these records on his own initiative, he undoubtedly helped sponsor this measure. The following week the City Council carried into effect another of Pintard's projects when it ordered the City Inspector's Office to maintain a Register of Births and Marriages and to report the totals in January of each year to the City Council. The main responsibility for keeping birth records was placed upon the physicians and mid-



City Inspector John Pintard, reformer and administrator. Courtesy of the New-York Historical Society, New York City.

wives who were instructed to make a written record of all births. showing the sex, names of parents, and date of birth. Each month they were to submit a copy of these records to the City Inspector. Even though a fine of \$50 was prescribed for failure to comply and the law appears to be clear and explicit, many babies were born without medical attention, and busy doctors and illiterate midwives were often prone to disregard the regulations. In the case of marriage records, the responsibility was placed upon the clergy. Members of this latter profession, however, were even more negligent than the physicians in reporting their activities to the City Inspector's Office, and, until it became necessary to secure marriage licenses, the accuracy of marriage records lagged well behind that of the other vital statistics. Quite obviously the fight to achieve accurate records of vital statistics had still a long way to go, but, under John Pintard's leadership, New York City had made a significant start.

Pintard's interest in statistics may well have been responsible for still a third ordinance enacted the following October. This one required him to keep an annual record of the monthly reports of the measurers of grain, lime, charcoal, boards, lumber, and hay. In addition, he was to keep an annual record of the amount and value of all goods imported or exported from New York City. Thus the City Inspector's Office gradually became, among other things, the chief statistical gathering agency.⁴⁰

By the end of the year it was evident that the City Inspector's Office was a notable addition to the city administration. The Council demonstrated its satisfaction by voting to pay the City Inspector an annual salary of \$1,250, instead of the \$3.50 per day which had originally been allotted. His assistant was to receive \$750. Early in 1805 Pintard, constantly trying to increase the accuracy of his vital statistics, persuaded the City Council to require all benevolent societies to report the deaths of their members to his office. When the City Council decided to create a Board of Health in the spring of 1805, the services of the City Inspector were found to be so useful that he was added to its membership.⁴¹

Since the early health boards had only a limited tenure, the City Inspector's Office assumed many of the functions of a health department. For example, the City Inspector was responsible for supervising Bellevue Hospital during the epidemic years, and for keeping records of the number of admissions and deaths. Over and above collecting statistical information, he often commented upon general conditions and made recommendations to the City Council. In reporting on Bellevue following the epidemic of 1805, Pintard declared that the buildings "appear to have been set up on the spur of the occasion, and on the presumption that the fever would never recur again." After describing the existing structures as totally inadequate, he commented that the "crouded [sic] state of the hospital during the last season, must have had an unfavourable influence on the spirits of the patients," and urged a drastic overhaul before the next fever season. One of the best commentaries upon the success of Pintard in this early period was an order by the City Council in November of 1805 making the Superintendent of Scavengers responsible to the City Inspector, Street sanitation was always a major problem, and even a man of Pintard's ability must have had some qualms about taking it under his wing.42

Notes to Chapter 6

- New York City Health Committee, Minutes, 1793-1796, pp. 1-6, N.-Y. Hist. Soc. Mss.
- 2. Ibid., 7-23. 41- 42.
- 3. Hid., 53-54, 74, 94-98, 112, 114 21.
- 4. N.Y. State Lows, 17th sess., chap. 53, March 27, 1794, III, 525-26.
- 5. New York City Health Committee, Minutes, 1793-1796, pp. 134-72.
- 6. Ibid., 173-75, 182, 184, 187-89.
- 7. Ibid., 190-92.
- 8. M.C.C., 1784-1831, II, 212-13, 217; Walsh, History of Medicine in New York, I, 60-62.
- 9. N.Y. State Laws, 19th sess., chap. 38, April 1, 1796, III, 682-86.
- Walsh, History of Medicine in New York, 1, 64-65; M.C.C., 1784-1831, H, 232-33.
- 11. M.C.C., 1784-1831, II, 254.
- 12. Ibid., 263, 265.
- 13. Ibid., 275, 429; Bayley, Letters from the Health Office, 61, 63.
- 14. M.C.C., 1784-1831, II, 330-31, 336, 346-47, 355. See also Bayley, Letters from the Health Office, 41-46, 52-54, 59-61.
- 15. M.C.C., 1784 1831, 11, 411.
- N.Y. State Lows, 20th sess., chap. 16, February 10, 1797, IV, 14-16; chap. 57, March 28, 1797, IV, 77-78.
- Ibid., 21st sess., chap. 65, March 30, 1798, IV, 227-34; The Medical Repository, II (1790), 116-17.
- 18. M.C.C., 1784-1831, II, 420-21; Stokes, loonography, V, 1349.

- 19. M.C.C., 1784-1831, II, 428-29, 444, 460-64.
- 20. Commercial Advertiser, August 21, 22, 1798.
- 21. Ibid., August 22, 1798.
- 22. Ibid., October 1, 1798.
- 23. M.C.C., 1784-1831, II, 481, 494-97.
- 24. Ibid., 498-99, 501.
- Ibid., 509, 533-34; N.Y. State Laws, 22d sess., chap. 70, April 10, 1799, IV, 395-98.
- N.Y. State Laws, 23d sess., chap. 87, April 4, 1800, IV, 541-43. See also George Rosen, History of Public Health (New York, 1958).
- Ibid., 22d sess., chap. 19, February 25, 1799, IV, 319-23; 23d sess., chap. 6,
 February 15, 1800, I, 169-70; The Medical Repository, II (1799), 462-66.
- 28. N.Y. State Laws, 23d sess., chap. 120, April 7, 1800, IV, 579-81; 24th sess., chap. 86, March 30, 1801, V, 176-86.
- The Medical Repository, VI (1803), 130-33; M.C.C., 1784-1831, II, 749-50.
- 30. M.C.C., 1784-1831, III, 94-97.
- 31. Ibid., 173, 184, 198, 288, 305.
- 32. The Medical Repository, VI (1803), 443 46.
- N.Y. State Laws, 26th sess., chap. 70, April 2, 1803, III, 228-35; Evening Post, April 22, 1803.
- 34. M.C.C., 1784-1831, III, 326, 366-67, 376.
- 35. Ibid., 432-33; Evening Post, February 9, 1804.
- 36. M.C.C., 1784-1831, III, 438-39, 442.
- Ibid., 460 61; Evening Post, February 9, 1804; N.Y. State Laws, 27th sess., chap. 8, February 28, 1804, III, 469-71.
- 38. M.C.C., 1784–1831, III, 477, 479.
- 39. Ibid., 551-52, 572, 576 77.
- 40. Ibid., 587, 613-14.
- 41. Ibid., 660, IV, 43; Evening Post, January 23, 1805.
- 42. Documents Relating to the Board of Health (New York, 1806), 9-14; M.C.C., 1784-1831, IV, 101.

The First Board of Health

Almost every year for more than a decade committees to investigate the causes of epidemics had been established, and report after report had made the point that both quarantine and sanitary measures were needed. Even before adequate mortality statistics had been accumulated, it was evident that the disease centered in the damp, dirty, low-lying areas in the vicinity of the docks. This concentration of yellow fever cases lent credence both to the importationists and to those who ascribed the disease to dirt, dampness, and crowding. In attempting to deal with the sanitary and quarantine measures, the city had first sought authority to act through its Mayor and Council. In 1796 the state had provided for state-appointed health commissioners whose chief function was to handle quarantine matters. Within the next two years, their powers were enlarged, and the health commissioners were given jurisdiction over both quarantine and internal sanitary measures. Under the impetus of the reform movement of the 1790s, the City Council began reassuming control over internal affairs, leaving only the administration of the quarantine in the hands of the Health Office. Even here, the City Council gradually exercised more control. Early in January of 1805 the City Council decided that rather than a Health Office, whose commissioners were appointed by the state, it needed a local Board of Health with broadly based authority.

On January 17 a city ordinance was passed creating a Board of Health to be composed of the health commissioners and several councilmen, and appointments to the new Board were made immediately. Within a few days the Board of Health requested the city to purchase two new dredges for cleaning the slips and recommended the employment of four "proper persons" to inspect

privies and report conditions to the City Inspector. Recognizing the limitations upon its authority, on February 4 the Board presented to the Council the draft of a proposed state law investing the City Board of Health "with more ample powers in relation to the preservation of Health." The City Council approved and passed it on to the Legislature, which responded with a law transferring to the Mayor and Council all sanitary powers previously held by the state-appointed Commissioners of Health. The new law gave the Mayor and Council the right to appoint a Board of Health consisting of the Commissioners of Health and "such other persons" as the Mayor and Council thought proper, and authorized the Mayor and Board of Health to order into quarantine any vessels considered a threat to public health. The city was permitted to invest the Board with all of its powers pertaining to public health. These included, under a provision of the new law, the right to levy fines up to the amount of \$1,000. As a firm indication of its intention to give the local health board full authority, the Legislature also provided that all surplus funds remaining in the hands of the Health Office were to be turned over to the New York City Board of Health. When this latter provision led to some controversy, the Legislature, a year later, reaffirmed its position by passing an act explicitly ordering the Health Office to transfer its funds.2

On March 25, 1805, the Mayor and Council, acting under the authority granted by the new act, made the appointments which brought the first official New York City Board of Health into existence. The Board consisted of the Mayor, Recorder, five Aldermen (one from each of the first five wards), and the Commissioners of Health. Later in the summer, as yellow fever made its appearance, the Board was enlarged to include the aldermen from all nine wards plus the City Inspector. At its first meeting on April 3, the Board elected James Hardie as its secretary. Shortly afterward, the City Council passed another ordinance specifying the duties of the Board of Health, instructing it to inquire into all nuisances, erect a health office, open a hospital at Bellevue, and order the removal of all infectious persons or things from the city. The ordinance provided further that the City Inspector and his assistant must attend all meetings and carry out the Board's instructions.3

The summer of 1805 gave the Board of Health ample opportunity to test its organization and powers. On April 15 word was received of the presence of vellow fever in Guadaloupe. The Board promptly proclaimed a quarantine against all vessels from there, and on April 18 three vessels were ordered to the quarantine station. In May the Council directed that all grounds and buildings at Bellevue be put under control of the health officials. Shortly afterward, the Board gave instructions that Bellevue be prepared to receive patients. Meanwhile, additional reports of yellow fever led the Board of Health on May 23 to extend the quarantine to all vessels from the West Indies. When a case of malignant fever was reported on June 7, the Board investigated thoroughly, and, even though the examining physicians disagreed over the diagnosis, moved the patient to the Marine Hospital, had his bedding and clothing destroyed, ordered his house disinfected, and provided his family with housing and provisions. The patient recovered without further incident.4

The thoroughness which characterized the handling of this case marked all actions of the Board of Health in the ensuing months. As soon as any complaint was made, the Board checked into it and took any necessary action. On July 8 the Board published an address to the citizens informing them of the precautions it had taken and reminding them of the health regulations. When additional cases of fever were reported in July, the Board of Health took similar steps to isolate the patients, but, because there was no agreement among the local physicians and the evidence was inconclusive, the Board felt that the fever cases were not malignant. On August 5, however, an official diagnosis of malignant fever was made, and the patient removed to the Marine Hospital. Since the disease seemed to be under control, the Board reassured the public that no danger need be apprehended. By the end of August, despite all the health officials could do, the disease began to spread, and New York once again found itself enduring a full-scale epidemic.

The strenuous efforts of the Board of Health and the City Council to minimize the impact of the epidemic have already been told in previous chapters. The mass evacuation of infected districts, the provision for medical care, and the housing and feeding of large numbers of the poorer citizens all show that the Board of Health had extensive powers and, what was more important, did not hesitate to use them. The rigid enforcement of the quarantine regulations and the prompt isolation of identified fever cases may well account for the fact that yellow fever was held in check until the end of August, and the mass evacuation undoubtedly reduced the number of cases and fatalities. The Board of Health could scarcely have been organized at a better time, and it fully justified the hopes of its founders.⁵

An interesting sidelight on this epidemic was the way in which the City Council sought to ensure a satisfactory working force on the Board of Health. On September 9 as panic was sweeping through New York and the number of fever cases was rising sharply, the City Council resolved that every one of its members should be a constituent member of the Board of Health and that five members of the Board should constitute a quorum. The Council also recognized that the nature of the work of the Board's secretary particularly exposed him to infection during epidemics. The incumbent, James Hardie, had already distinguished himself during earlier fever outbreaks, and the Council, noting these "extraordinary and meritorious services" and the possible future danger, resolved that, should he lose his life in the course of his duties, it would "make adequate provision for his family."

Of the two basic theories respecting yellow fever, the importation one aroused the more bitter controversy. The benefits, esthetic and otherwise, from sanitation were all too apparent, and while taxpayers occasionally protested against the cost, few voices openly opposed sanitary measures. The quarantine, however, caused a direct economic loss, and shippers and shipowners both were tempted to bribe quarantine officials. Moreover, no one was precisely sure just what the quarantine was against. Was disease caused by damaged coffee or other cargoes? Was it carried only by the sick? Or could it be carried in their bedding and clothing? Under the circumstances, no one could be satisfied with the quarantine. The more zealous advocates of quarantine invariably felt that the regulations were neither strict enough nor properly enforced, while the nonimportationists were equally certain that the rules were unnecessarily rigid.

The New York Evening Post was a staunch advocate of quarantine and carried on a perpetual crusade against the Health Offi-

cer, particularly in the case of Dr. John R. B. Rodgers. Rodgers, as a member of the Medical Association's committee studying the 1798 epidemic, had concurred in the view that yellow fever was of domestic origin, and the Evening Post never permitted its readers to forget this. In June of 1804 its editor warned against the danger of leaving too much discretion in the hands of the Health Officer and expressed the fear that an "anti-contagionist" might be appointed to the office. In July he criticized Health Officer Rodgers for permitting sickly vessels to leave the quarantine. These attacks elicited a response from Rodgers, who presented a reasonable defense of his actions. The Evening Post was not mollified, and, after reminding its readers that Dr. Rodgers had been opposed to quarantine in 1798, declared that if he still held these views, "they render him an improper person to be appointed to guard the city against the introduction of the disease by IMPORTATION."⁷⁷

Despite the fulminations of the Evening Post and objections from certain citizens, Dr. Rodgers continued as Health Officer. In a well-written letter to the Board of Health on December 19, 1805, he again defended himself against the repeated charges of laxity in his quarantine duties. He declared that although he did not believe in importation: "I consider myself merely an executive officer, and whatever the law directs, I have ever, and shall ever perform, to the best of my ability, with fidelity and care. As an officer, I obey the law in all its prescriptions, without examining its merits or demerits." The position which Dr. Rodgers held was both highly responsible and quite lucrative. In 1807 an Evening Post editorial opposed a suggestion that the work of the Health Officer be divided among two or three individuals on the grounds that the estimated income of the Health Officer was about \$10,000. Since this was about equal to the income of the top physicians in New York, the Evening Post felt that a lesser amount would no longer make the position attractive to able men. It pointed out that the Health Officer literally had to go into voluntary exile at the guarantine station and "that every Health Officer hitherto has fallen a sacrifice to the situation." While arguing in defense of the office, the Evening Post could not resist a dig at Rodgers "who it is alleged is quite as attentive to politics as to medicine."

Surprisingly, Rodgers managed to hold his job for many years, except for a brief interval in 1810 when Dr. Joseph Bayley occu-

pied the post. Shortly before this event, Rodgers replied to some of his colleagues who had joined the newspapers in opposition: "I have even done more than I otherwise should, because I knew that it was thought by some, that I did not believe in all the speculative doctrines which the law acknowledges." The letters which Rodgers wrote in his defense over the years reveal him as an intelligent, articulate, and reasonable individual and leave the impression that he was doing a conscientious job. Yet the question still arises, why was a man who opposed "the speculative doctrines" of importation made responsible for enforcing the quarantine regulations?

With the public and the medical profession sharply divided over the cause of vellow fever, the health officials were constantly on the defensive. In summarizing its activities during the epidemic of 1805, the Board of Health reported on November 13 that although both theories on the origin of yellow fever were encompassed by the laws of the state, it explicitly supported the contagion doctrine. The Board then pointed out that it had full authority to remove the sick to the Marine Hospital but had used its authority with discretion, recognizing that this remedy was "extremely irksome and afflicting, and [was one] which perhaps ought only to be resorted to in extreme cases." The apologetic tone of the Board's report arose from the opposition of the middle and upper-class citizens who strongly favored arbitrarily wheeling the sick poor off to pesthouses, but were outraged when the health officials proposed the same treatment for "respectable" yellow fever patients.9

The term of office of the Board of Health was a limited one, and on December 9, 1805, the City Council appointed a new Board. The membership was identical with that of the first Board save that the City Inspector was not specifically included. This Board, too, was eventually enlarged to include all members of the Common Council. The first action of the new Board was to appoint Alderman Wynant Van Zandt, Jr., as chairman of a committee to prevent the return of yellow fever and find ways to eliminate all nuisances. The chairman immediately appealed to physicians and the general public for help. After a month's study, the committee submitted its findings. First priority was given to the need for a "pure and wholesome" water supply, and for common sewers in those streets "as are of sufficient descent to the river. . . ."

Concerning the need for improved drainage, the committee recommended that all wharves be faced with stone or other impervious material to prevent seepage. Returning to another theme of earlier reports, the committee urged that burials be prohibited within the city limits. A novel proposal—and one which indicates the extent of urbanization-was that "the planting of trees and other healthy vegetables ought to be encouraged," on the grounds that they would promote a more salubrious atmosphere "and thereby diminish the prevalence of pestilential diseases." Another new and significant recommendation was that "a scientific and skilful engineer . . . be employed to assist in projecting and executing the several objects embraced in this report." In making this point, the committee foreshadowed the approach of the great English sanitationist, Sir Edwin Chadwick, who almost forty years later envisioned sanitation as an engineering, rather than a medical, problem.

The rest of the recommendations followed the path of similar reports-filling in of low lots and flooded cellars, no further encroachment on the Hudson River, and stricter quarantine laws. In urging that Bellevue Hospital be enlarged, the committee suggested that a pay or private hospital be erected "for the accommodation of such persons, whose circumstances may afford the expense." Hospitals were still equated with pesthouses or else looked upon as institutions to which the sick poor were sent to die. Unquestionably the objections of substantial citizens to having their sick ordered to the Marine Hospital or Bellevue was a factor in this recommendation. The establishment of pay hospitals, however, was an essential step toward raising the quality of medical care, and the committee, for whatever reason, made a valuable suggestion. Perhaps one other recommendation deserves special note. Certain houses, the committee found, "have on the recurrence of every malignant fever, proved to be the principal seats of disease, and the graves of their tenants." The committee proposed that these buildings be turned into warehouses and "any injury sustained by the proprietors be defrayed by the public."10 In taking this position, the committee was in accord with an earlier decision of the City Council to engage in a limited slum clearance program. In both cases, however, property rights were carefully guarded. The important point is that restrictions were placed on the use of

private property, and that tax money could be used to promote public health. Chairman Van Zandt and his committee members, like some of their predecessors, aimed too high, and their report was ahead of the times. Yet health education is a long slow process, and this report was one of the many factors which slowly created public awareness of health needs.

As one of the early health committees had written, the apparent success of the measures used by the Board of Health proved almost self-defeating. The virtual disappearance of vellow fever for fourteen years after the epidemic of 1805 may have had little to do with either the quarantine or sanitary regulations, but its absence made these rules appear to be needless and costly. The perennial fevers and fluxes among what were considered the intemperate, immoral, and dirty poor were ascribed to their besotted way of life and appeared to constitute no serious threat to the decent, respectable-and moneyed-classes. Many well-to-do citizens had no awareness of how the impoverished lived. A newspaper letter in 1803, signed "Common Sense," derided a physician who had attributed pestilence to "Many people sleeping together in damp narrow sheets." The correspondent wished to know what sort of patients this physician had been accustomed to visit and asked if it was logical to presume "that it is a customary thing for people to pig together here, during the hot weather, heads and points, in 'the same truckle bed.' "11 Contemporary descriptions of how the poor lived in 1803 might make this naiveté seem laughable were it not that many people today happily close their minds to comparable conditions.

The only concrete result of the 1805 committee report was a supplementary quarantine law passed in March of 1806 which required all vessels from the West Indies or the Mississippi River arriving in the summer months to spend a minimum of four days in quarantine. Ship captains failing to comply were subject to a \$2,000 fine or twelve months in jail. The Legislature also renewed the basic Health Act of 1799 which had enabled the city to appoint inspectors of lots and had given it extensive powers over sanitary and health measures. The Act had been renewed for three years in 1803, but the reenactment in 1806 specified that the law was to "continue in full force, without limitation of time." The Legislature made a stab at acting upon the committee's recom-

mendation to improve Bellevue. A law on April 7 authorized the Board of Health to raise \$25,000 by means of a lottery, the money to be used for the "crection of such buildings as they shall deem necessary for the accommodation of persons sick with malignant disease. . . ."12 Since no machinery was established for making the act effective, it brought no immediate results.

The resolute work of the Board of Health of 1805 firmly established this administrative unit in the city government. Each year the City Council would appoint a new Board, whose duty it was to prevent or minimize the impact of epidemic disease. Since no serious epidemics occurred for a number of years after 1805, its work became more or less routine. The quarantine regulations were in the hands of the paid health officers, and general sanitary matters were usually handled by the street commissioners, the City Inspector's Office, or else directly by the Council. At certain times of the year, the Board of Health would dutifully remind the public of existing regulations or suggest the renewal of city ordinances pertaining to health and sanitary matters. For example, in December of 1807 the Board of Health recommended that the City Council put into effect "the usual methods heretofore adopted at this season of the year for the preservation of the public health, by inspecting the City for the purpose of emptying privies and removing other impurities." In May or June an address would be made to the public reminding them of the danger arising from filth and nuisances and urging them to respect the regulations. Occasional suggestions were made to the City Council, as in June of 1800 when the Board of Health recommended a law for cleaning and ventilating cellars. A lengthy city ordinance, designed to protect public health by eliminating nuisances, was enacted in January of 1808. It dealt with a variety of matters ranging from burials to the sale of ovsters, but it appears to have been sponsored by the City Inspector's Office rather than the Board of Health.¹³

After several years of relative inactivity, the Board of Health suddenly was forced to bestir itself in the summer of 1809 when yellow fever broke out in Brooklyn. The *Evening Post*, always on the alert for breaches of the quarantine laws, accused the Health Officer of permitting vessels to come up to New York without performing proper quarantine and blamed the Board of Health for refusing to admit the existence of yellow fever in

Brooklyn. On August 2 the Mayor proclaimed a strict quarantine against the infected area in Brooklyn, and the following day the Board of Health tightened its general quarantine measures. Fortunately, the outbreak was not serious, and New York escaped. Its chief effect on the Health Office may have been financial. The three health commissioners derived their income directly from fees and indirectly from the head tax on crews and passengers entering New York. The Embargo Act of 1807 abruptly halted much of New York's trade and drastically reduced the income of the Health Office. In March of 1809 the health commissioners appealed to the State Legislature for a supplementary fund to maintain the quarantine office. The Legislature agreed to meet any deficiency up to the amount of \$6,000. Since only a part of this sum was utilized, the following year the Legislature again voted a supplementary appropriation.¹⁴

The restrictions placed upon trade by the federal government undoubtedly made the rigid quarantine laws seem even more oppressive, and they may have been responsible for a new measure passed in 1811. Just prior to this, in December of 1810, the Council had been asked to appoint a three-man committee to meet with similar groups from the Chamber of Commerce and the Board of Health to revise the quarantine laws. The joint committee thus established concurred in a report made by the new Health Officer, Dr. Joseph Bayley, which argued that the present laws were "very oppressive to the merchants. . . ." Bayley, although a firm advocate of the importation theory, strongly recommended that the quarantine system be more flexible, with the Health Officer being given wider discretion. He believed that vessels arriving from Europe or from southern ports represented no threat unless disease was present in the port of departure. Even the restrictions upon ships from the West Indies, admittedly the chief source of infection, should be eased. The City Council, which had expressed its displeasure earlier over restrictions on commerce, happily agreed with the joint committee and submitted its recommendations to the Legislature. The latter, equally sensitive to economic pressure, responded by overhauling the quarantine law. The new measure, passed on April 8, 1811, laid down more specific regulations with respect to vessels having sick persons on board or coming from infected ports, but at the same time, it eased the restrictions on other ships and gave the Health Officer more discretionary power.¹⁵ The absence of epidemic disease for any protracted period of time invariably brought demands for the removal of restrictions on trade. In this case, the easing of the regulations did no harm.

Shortly before the new law was passed, Dr. Joseph Bayley, who had served in the Health Office for less than a year, was dismissed. The reasons apparently had nothing to do with his work. One newspaper asserted that his successor (Dr. Rodgers) had "received, during the former seven years that he [had served in] office, upwards of seventy-thousand dollars in cash, besides perquisites," and it asked if the health of the city was "to be sacrificed to the blind spirit of party polities." Apparently this same spirit had led to the dismissal of another excellent appointed three years earlier. Under John Pintard's able leadership the Office of City Inspector had steadily assumed more responsibility. Originally created by a city ordinance, in December of 1807 a state law gave legal sanction to the office. Under the terms of this act, the City Inspector was to make diligent inquiry into all nuisances and complaints and prepare corrective ordinances for the City Council; he was to collect mortality and business statistics, carry out the instructions of the Board of Health, examine any and all buildings and properties for nuisances, and be responsible for all fire regulations. His assistant, who was also to serve as an aid to the Street Commissioner, was to see to it that all street regulations were strictly observed. Pintard, meanwhile, was happily collecting statistics and passing the information along to the City Council. In 1807 he reported that the population of New York City was 83,530, having tripled in the previous twenty years. He estimated that, if the rate of increase continued, the city would have 705,650 residents by 1855, an estimate that turned out to be surprisingly accurate. Either from partisan politics or as a result of Pintard's zeal, in February of 1808 he was dismissed from office by a vote of 10 to 7. After some debate, the City Council appointed Jacob Morton to his position. 16

Under Morton's leadership and that of his successors, the City Inspector's Office seems to have settled down to handling routine matters. The gathering of statistics was performed in a perfunctory fashion and no innovations were attempted. A hint of this

can be found in The Medical Repository, where one of the editors in commenting upon the City Inspector's mortality report wrote: "With our unwillingness to entertain the least doubt of the exactness or authenticity of this catalogue, we confess that the same could not comport with our daily professional observations of health in general. . . ." There may have been an implication that all was not well in 1811 when the City Council ordered the City Inspector to submit a report on the salaries and duties of his staff. The Council, however, was asking for similar reports from the other administrative officers, and its actions may have reflected a general fiscal tightening because of a slight recession rather than implications of graft. Three years later the City Council appointed a special committee to inquire into "what alterations if any" were necessary in the Office of the City Inspector. The committee report could scarcely have been too unfavorable since the Council voted the following December to raise the City Inspector's salary \$250. On the other hand, a grand jury report in 1815, which cited a number of nuisances and recommended "a strict execution of the Health Laws," was undoubtedly aiming some barbs at the City Inspector.17

Like the City Inspector's Office, the Board of Health, too, was largely preoccupied with routine matters in the years from 1805 to 1819. The best proof of its limited activity can be found in the City Comptroller's reports. For example, the city appropriated \$8,500 for the Board of Health in 1805, \$1,500 in 1806, and \$1,000 in 1809. The total city expenditures for 1813 were approximately \$524,000, and the amount appropriated for the Board of Health was only \$1,600. Five years later, only \$900 was allocated to the Board of Health. 18 It should be borne in mind, however, that the Health Office, whose chief concern was with the quarantine, was largely self-supporting. Although the Board of Health had a small operating budget, it did become involved in some large-scale financial operations. In 1806 the Board had been authorized to raise \$25,000 for the construction of hospital buildings by means of a lottery, but for one reason or another had not acted. In December of 1813 the Board announced that it would sell 35,000 lottery tickets for \$7.00 each, with prizes ranging from \$1,000 to \$40,000. An amendment to the 1806 law was passed in April of 1814, which helps to explain why the Board of Health delayed so long in resorting to the lottery. The preamble stated that it was seeking to clarify the questions which had been raised as to how the lottery should be managed. The lottery was held for several years and seems to have been quite successful. In 1815 the City Treasurer received \$20,000 "from the Managers of the Board of Health Lottery," the money to be kept on hand "until required for the purposes for which it was raised." The following year another \$4,713.88 was turned over to the Treasurer. In January of 1816, however, one of the newspapers commented upon rumors about the "Medical Science Lottery" which were impairing the public confidence. Whether this was the Board of Health lottery is not clear, but the rumors were not likely to have promoted the causes of lotteries in general. 19

The Board of Health was always concerned with public nuisances and the enforcement of sanitary regulations. But jurisdiction over these matters was shared with the City Inspector's Office and the street commissioners, and the overlapping of authority among these agencies undoubtedly created confusion. Anything out of the ordinary, however, was turned over to the Board of Health. A newspaper correspondent asked the Board to look into conditions in the Debtor's Prison in the summer of 1808 because the dirt and crowding was liable to precipitate "the Jail fever." In 1811 the Resident Physician reported that the Bridewell (or common jail) was in a crowded and filthy condition and that a "dangerous fever" was present. The City Council in both instances referred the subject to the Board of Health. In the latter case, the Board acted with dispatch. The sick were transferred to Bellevue and the Marine Hospital, and the jail was thoroughly cleaned.²⁰

Since epidemic disease seemed to be essentially a phenomenon of summer and fall, it became a regular practice to appoint the Board of Health in May or June, on the assumption that its major concern was with epidemic outbreaks. A state health law in April of 1811 made the Board of Health more responsive to the municipal government by changing the status of the three health commissioners to ex officio membership. One provision, however, specified that two health commissioners and one or more members of the Board of Health meet daily from May 31 to October 1. Much of the new measure, as mentioned earlier, was devoted to making the quarantine restrictions on vessels suspected of harbor-

ing disease more explicit. Ships coming from places where yellow fever existed were required to remain in quarantine for a minimum of thirty days, and for at least twenty days after the cargo had been discharged and the ship cleaned and "purified." During the summer months nearly all vessels were required to spend two to four days in quarantine, depending upon their places of origin. In every case, however, the Health Officer was given discretionary power over the degree of "purification" and the number of days to be spent in quarantine. Moreover, the Governor, or in his absence, the Mayor or Recorder, was empowered to proclaim quarantine at his discretion.²¹

Pursuant to the state law, the City Council passed an ordinance in April of 1811 appointing a Health Board for the coming summer. In addition to the Commissioners of Health and the usual city officials, three physicians, Drs. Joseph Bayley, John H. Douglass, and Joshua E. Birch, were appointed to the Board. The decision to put medical men, other than the health commissioners, on the Health Board is particularly significant, since the first half of the nineteenth century was one in which there was considerable distrust of the medical profession. There was no requirement, for example, that any members of Chicago's first health board (1837–1860) hold M.D. degrees.²²

Two, and possibly all three, of the physicians appointed to the Board were firm believers in the importation theory, and this helped the city use its new authority to establish a quarantine. On September 16 the Board of Health met to consider reports of a "malignant" fever in Perth Amboy. It recommended to the Mayor, who promptly took action, that all communication between the two cities be cut off. The board also appointed a committee to confer with Dr. Rodgers, the Health Officer. This committee, consisting of Drs. Bayley and Douglass of the Board of Health and Dr. David Hosack, another advocate of importation, diagnosed the disease as yellow fever and traced it to a ship from Havana, Their report was highly critical of the Health Officer, accusing him of refusing to accompany the committee members to Perth Amboy and of withholding information.23 This incident is another illustration of the unremitting war between the two schools of thought on the origin of vellow fever. It does raise the question again of why a nonimportationist like Rodgers should have been placed in charge of the quarantine and how he managed to stay in office as long as he did.

Like most city agencies, the Board of Health was reluctant to use its powers, and during these years prosecutions for violations of the health laws were a rarity. Persuasion was the chief reliance, although mild threats occasionally were made. In 1816 the Board of Health apologetically stated in a public notice that while it "would studiously avoid imposing any unnecessary regulations or restraints upon their fellow citizens, still there are duties imposed by the laws, . . . and it becomes the duty of the Board to cause them to be observed." The Board regretfully noted that the law requiring boarding houses to report cases of infectious disease "has been wholly unattended to." 24

While many merchants recognized the value of quarantine, it was a costly process and, since no unanimity existed even among the physicians as to its value, there was always pressure to relax its enforcement, particularly if disease had not gained a foothold for several years. On the whole, however, the quarantine laws were administered quite efficiently. The Evening Post, the foremost advocate of quarantine, expressed satisfaction in 1818 over the manner in which the health officers had dealt with a ship suspected of carrying disease. The enforcement of the domestic laws against nuisances and unsanitary conditions, however, was another matter. John Pintard declared in October of 1817 that he was becoming a convert to contagionism after seeing how the quarantine kept vellow fever out of New York City despite "every chance in favour of domestic origin from heat, humidity & abundant filth." The Minutes of the Common Council on December 29, 1817, reveal considerable laxity in the city administration. A special committee looking into the work of the Clerk of the Common Council, who also served as secretary to the Board of Health, found that he kept very poor and incomplete records. Blank spaces had been discovered in the Council Minutes extending back for a period of years and no entries had been made in the Book of Ordinances since 1815. The committee's recommendation for stricter accounting measures also suggests the possibility of financial irregularities.25

During the summer of 1819 many loopholes in the quarantine system came to light. Passengers from incoming vessels were

found to have avoided quarantine by disembarking in New Jersey or at Throg's Neck. One group simply transferred from their ship to the ferry at Sandy Hook and came directly into the city. It was discovered, too, that certain other ports tended to dump unwanted immigrants on the city's docks. Newspapers in Perth Amboy and New York became embroiled in a dispute over three Irish immigrants who were unloaded on one of the New York piers. The group had originally landed in Salem, where the authorities, eager to get rid of sick and destitute immigrants, had shipped them off to Perth Amboy. Here, according to one report, a subscription had been raised and the money used to send them to New York.²⁶

This same summer, 1819, also saw New York's long exemption from yellow fever come to an end. It was a trying time for the Board of Health, which worked assiduously, first to prevent and later to minimize the disease. Early in the summer the Board had sent physicians to investigate reports of the disease in Newport, New Haven, and Philadelphia, and, as the danger to New York increased, it began tightening up the enforcement of sanitary ordinances. As soon as it became clear that yellow fever had gained a foothold in New York, all cases were removed or isolated, and infected areas, as noted in the previous chapter, were ordered evacuated. In the middle of September, as the epidemic was reaching its peak, the Board of Health published a letter by Dr. Hosack on the diagnosis, treatment, and prevention of yellow fever. The Board was evidently criticized for this action, since few doctors could agree upon either the diagnosis, treatment, or etiology of vellow fever, and two days later the Board of Health publicly backtracked by declaring that it had not intended, in publishing Dr. Hosack's letter, to support his views!27

Despite a creditable and conscientious job, this was not the only criticism the Board had to endure. The Medical Society issued a pamphlet accusing the Board's members of being so committed to the doctrine of importation that they refused to diagnose yellow fever unless the case could be traced to some outside source. A Dr. Charles Drake, an adherent of the domestic origin of the fever, went so far as to assert that yellow fever had been present in New York City in the summer of 1818 at a time when the rigid quarantine should have kept it at bay. Along with Dr.

Felix Pascalis, who discoursed on the epidemic of 1819 in *The Medical Repository*, he ridiculed the Board of Health for placing its chief reliance upon quarantine measures. Pascalis was at least willing to concede that the Board of Health had taken some sanitary precautions, but he blamed it for not mobilizing public support for an effective sanitary program.²⁸

In the winter of 1819-1820, the Board sought additional powers, hoping to prevent the recurrence of the fever. At its request, the City Council petitioned the State Legislature for additional laws to prevent crewmen and passengers from evading the quarantine laws. Nothing seems to have come of this particular petition, but the Legislature did enact a new and more comprehensive health law. The essential features were identical with the law of 1811, but there were some significant changes. The maximum fine against physicians failing to report cases of infectious disease was increased from \$50 to \$250 and that of boarding-house keepers from \$100 to \$250. Probably referring to the profits from the lotteries, the Commissioners of Health were authorized to replace the wooden buildings of the Marine Hospital with stone or brick whenever funds were available. Another provision empowered the Mayor and Council to "appoint health wardens and such suitable officers as they may think proper, and to authorise such officers . . . to enter into, and examine all dwellinghouses, stores, buildings, apartments, lots, vards and enclosures of every description. . . . " The power of the Board of Health vis-à-vis the Commissioners of Health was strengthened by a provision which required the latter to give all information respecting the city's health to the Board of Health, and specified that the Health Officer must supply the Board with a report on every vessel inspected.²⁹

A mild recession that winter led the City Council to engage in a policy of retrenchment. One proposal was to abolish the position of City Inspector and turn his duties over to the "Clerk and Assistants to the Board of Health." It would be gratifying to assume that the Board itself was too well established for anyone to contemplate its elimination. A more likely explanation is that, except when an epidemic was present, the Board's expenses were too small to be of any significance. The City Inspector escaped the fiscal axe, but his salary was reduced by more than a third and a similar cut was administered to those of his two assistants.³⁰

Although the summer of 1820 passed uneventfully from the standpoint of vellow fever, it did see the removal of Dr. DeWitt as Health Officer and the appointment of Dr. Joseph Bayley in his stead, a change which must have heartened the supporters of strict quarantine measures. The hands of the "importationists" were also strengthened in that year with the appointment of Dr. David Hosack as resident physician. Hosack was a firm believer in the importation doctrine, but, as an intelligent individual, he also recognized that environmental conditions were at least as important in the spread of the disease as the introduction of the infection itself. In a lecture to medical students in November of 1820 he pointed out that there were three categories of disease: those transmitted by direct contact; those by contact and by air; and those, such as yellow fever, typhus, plague, and so forth, spread only through impure air. Hosack deserves credit for recognizing that diseases such as vellow fever did not fit into the normal pattern. For example, he quoted Dr. Bayley's observation that perfeetly clean ships occasionally came into quarantine carrying yellow fever, while filthy ships often had healthy crews. When Dr. Hosack left the sure ground of observation and attempted to theorize on the etiology of yellow fever, he was as much at sea as his colleagues. He attributed it to the effect of tropical heat acting upon northern men over an extended period of time. Fortunately, his theory did not prevent him from advocating an effective program of sanitation and isolation.31

He proposed that all cases of infectious fevers be isolated, since, he wrote, distance tends to dilute the emanations from diseased bodies. He next recommended that strict regulations be placed over the construction of all living quarters in order to guarantee to all citizens ample fresh air and ventilation, plenty of space, and clean conditions. "These preventive measures," he said, "cannot be carried into effect, without overcoming considerable obstacles, without interfering with the privileges of the citizen, the disposition of private property, and with domestic economy." Having set forth this radical principle, he then advocated a system of common sewers, and urged that the city consider the plan of John Stevens of Hoboken, who had proposed the universal adoption of water closets and an underground sewer system. Concerning the city's water, Hosack estimated that one-twelfth of the city's area

was occupied with privies, and he wondered what the impact of this must be on the water supply, particularly in view of the city's porous sandy soil. Like his predecessors, he recommended the elimination of burials within the city, the substitution of stone for wooden wharves, wider and cleaner streets, and finally, ample supplies of pure water.³²

Even in 1820, there could have been few responsible citizens who could object to the goals Hosack had set, but the majority of them undoubtedly shook their heads in amazement at his impractical idealism. Taxpayers would surely rebel at the rates required to finance such enormous projects, and, more important, once the rights of property were overridden, might not the whole social system come crashing down? Anyone who has witnessed the way in which Congress during the past thirty years has voted billions for defense, for farm subsidies, or for veterans' bonuses without a murmur, but has, at least until the last few years, consistently boggled at appropriating a few million dollars for health and social welfare, can readily appreciate how much Hosack was ahead of his day.

A minor attempt at reform which may have arisen from Hosack's appeal for a major change in public policy was made in January of 1821. A resolution was proposed in the City Council to authorize the City Inspector "to prevent too many persons from living in one house," but the motion failed to carry. Tenement property was already becoming a lucrative investment, and property owners were generally resentful of the costs imposed by the sanitary regulations. When the Council, at the request of the City Inspector, passed some 84 ordinances requiring specific individuals to clean up their yards, cellars, and privies, a newspaper correspondent signing himself "Vigilarius," indignantly protested, accusing the Council of accepting these measures on the word of the City Inspector without thoroughly examining each case. Another writer, "C," defended the Council and the City Inspector by pointing out that it would be foolish for the City Council "to re-view what the examiners had seen," and that the removal of nuisances was necessary to prevent a recurrence of fever. In his second letter, "Vigilarius" revealed the basis for his opposition when he demanded to know whether the City Inspector could draw up ordinances requiring citizens to fill in their land, "and whether those owners are not thereby put very often to heavy expenses, say of hundreds or thousands of dollars?" With nearly all sanitary regulations increasing the costs of property owners and businessmen and all of them adding to taxes, it was small wonder that health laws were difficult to obtain and even more difficult to enforce.

The following summer, 1821, New York again escaped a yellow fever epidemic, although several cases of fever led to some heated debates among the physicians. The months were also enlivened by a public dispute between the Medical Society and the Board of Health over whether or not the outbreak on Bancker Street during 1820 had been yellow fever. The newspapers divided on the issue, and the battle raged through the summer.³⁴

When a new Board of Health was established in June of 1822, it included the three health commissioners but contained no additional medical personnel. For some reason this Board does not appear to have been as effective or as decisive as some of its predccessors. Cases of yellow fever were reported in July, and when the Board refused to accept the diagnosis, it was accused of concealing the presence of the disease. By August 5 the evidence was clear, and the Board officially conceded that yellow fever was in the city. The newspapers, which had been reporting cases all along, continued to list new cases and deaths from the fever without waiting confirmation from the Board of Health. On August 16 the Board appealed to them to use discretion on the grounds that these unofficial reports were tending to "diminish that confidence of the citizens and the public in the daily official reports which it is highly important to preserve. . . ." The health officials also ran into trouble evacuating infected districts. On September 5 the Board notified the public that even "after exhausting every measure of persuasion, and, in some instances, compulsion, for the purpose of removing inhabitants from the infected districts," many persons were still going in and out of the danger zones, and it appealed to all citizens to stay away.35

Another public discussion which tended to cast the health officials in a bad light concerned the relative value of so-called "acid fumigation" versus the spreading of lime and other disinfectants. The former had been proposed by Drs. David Hosack and John Griscom in 1819 and was revived in 1822 by a Dr. Daniel Kis-

som, who recommended the use of pyroligneus acid for this purpose. The Board referred the question to Dr. Hosack, who conceded that Kissom's suggestion was good, but said he preferred nitrous and oxymuriatic acid. Dr. Griscom then wrote a public letter to the Board of Health in which he advocated the fumes of either chlorine, muriatic, or nitric acid. Dr. Nicholas Quackenbos, the Resident Physician, and several other medical men upon whom the Board of Health relied for advice opposed acid fumigation, and the proposal was rejected in favor of the traditional practice of spreading lime, charcoal, and tanner's bark in the streets.³⁶

Having entered the fray, Dr. Griscom now published another open letter to the Board in which he laid down certain prerequisites if the city was to avoid epidemics and enjoy good health. He listed, first, the need for an adequate water system and, second, the necessity for city planning to provide open parks and squares and "to correct the evils . . . which will naturally spring from the spirit of speculation and the bustling activities of extended commerce." Next, he called for the complete renovation and reconstruction of public sewers and close public supervision of all privies. Finally, he mentioned the decaying condition of the wharves and the filthy state of the streets. Concerning the latter, he suggested that the difficulty was not with the laws but rather "the impossibility of enforcing them." ³⁷⁷

Ineffective as the Board of Health may have been, its measures, including isolation of the sick and mass evacuation of fever centers, certainly helped to reduce the number of casualties. This fact in no way softened the criticism. One newspaper declared in November that the city had "fallen a victim to the mistaken notions of a badly constituted Board of Health" and asked that the health laws "be carefully and understandingly revised." Later in the month, Mayor Stephen Allen, in his capacity as president of the Board of Health, presented a long and detailed report to the City Council, Like all preceding reports, this one noted the disunity among the medical profession and called for both quarantine and sanitary measures. It then proposed a series of specific changes in the health laws. Two or three of the proposals indicate that a clash had occurred between the Health Office and the Board of Health. The report asked that the Board be empowered to appoint medical assistants who would have "equal powers in some respects as those now granted the Resident Physician." It also urged that the health commissioners "be subject to such instructions from the Board of Health as they may deem necessary and indispensable," and that those individuals responsible for inspecting vessels in quarantine be appointed by and placed under the supervision of the Board rather than the Resident Physician.³⁸

Another set of recommendations sought to make the quarantine more stringent and to give the city greater control over its administration. Referring to another longstanding complaint, the report asked that the Board of Health, rather than the Health Office, be empowered to initiate suits in its own name. Among the specific abuses this proposal hoped to correct was the failure of physicians to report yellow fever cases. In part, this latter problem arose from the objections of patients to being moved to Staten Island. The committee, recognizing this as a legitimate grievance, recommended that a fever hospital be built closer to the city. The final suggestions concerned the perennial complaints about the filth of the streets, the omnipresent public nuisances, and the need for an adequate water supply.³⁰

Extensive as were the modifications proposed by the Board of Health, an even more radical change in its organization was advocated by some of the newspapers. The *National Advocate* suggested that not only should the Board be given "extensive and ample powers" but that it be completely separated from the City Council. The Board of Health, the *National Advocate* insisted, should consist of "at least six respectable citizens" and be empowered to appoint medical advisers and assistants, inspectors of streets and nuisances, and all other officers necessary to carry through an effective public health program. The *Evening Post* supported this proposal but with several minor changes.⁴⁰

As if the divided counsels of the physicians and articulate laymen did not create enough worries for city officials, some of the clergy set forth their own theories on the etiology of the recurrent epidemics. The Reverend Paschal N. Strong of the Middle Dutch Church in one of his sermons attributed the epidemic to "the public contempt which this city, as such, has affixed to God's Sabbath...the inordinate appetite for gain... [and]...the general profligacy of morals..." It was no accident that the outbreak centered in the commercial district, he declared, in view of the

rapaciousness and greed of New York merchants.⁴¹ In voicing these ideas, Strong was running counter to the emerging scientific spirit of the time, but he spoke for many citizens. And as long as a large section of the population felt that pestilence was essentially a spiritual problem, they could scarcely be expected to promote and support a policy obviously designed to counter the will of God.

Fortunately, while the Legislature was willing to pay lip service to the prevailing theological concepts, it was equally willing to search for more concrete remedies. Acting upon the recommendations of the New York City Board of Health, a new health law was passed on March 21, 1823, which conceded most of the points. In authorizing the Mayor and Council to establish a Board of Health, the law no longer specified that the three commissioners of the Health Office (Resident Physician, Health Officer, and Health Commissioner) must be members. The Resident Physician was made subject to the control of the Board of Health, the law stating specifically that he was to perform such "duties and acts, as may be required of him by any ordinance, resolution, by-law, regularly passed by the board of health. . . . " The Health Commissioner was to be a licensed physician, and he, too, was made responsible to the Board of Health. The Board was also given the right to appoint additional consulting physicians, who would be paid by and responsible to the Board.

Discretionary power was given to the city and Board of Health to order any vessel away from the wharves and docks; in addition, the local authorities could permit the importation of sound hides and skins for manufacturing purposes. One last but important clause, which undoubtedly arose from the opposition encountered by the Board in evacuating infected areas during the epidemic of 1822, gave the Board of Health absolute power during fever outbreaks to isolate individual cases, families, or infected districts. The Board was not only authorized to "effectually prevent all communication between the part or parts so infected, and any other part of the city," but was given the specific right to fence in all infected districts and to prevent any one from entering or leaving.⁴²

It would seem that the Health Law of 1823 had covered almost every contingency, and, if the enactment of laws was sufficient in itself, New York City would have been a clean and healthy place. The Board of Health, however, was essentially a summer agency, whose main function was to deal with epidemics. Fortunately for the city, if not necessarily for the cause of cleanliness and sanitation, yellow fever had struck its last serious blow at New York and a few years' grace was given before Asiatic cholera took up the task of winnowing the population—and thereby arousing interest anew in public health.

Notes to Chapter 7

- 1. M.C.C., 1784-1831, III, 672, 674-75, 677, 681.
- N.Y. State Laws, 38th sess., chap. 31, March 9, 1805, IV, 43-44; 29th sess., chap. 78, March 21, 1806, IV, 410-11.
- 3. Hardie, Account of the Malignant Fever . . . 1805, 15-16.
- 4. Ibid., 17-23; M.C.C., 1784-1831, III, 748 49.
- 5. See Chapter 5 for a fuller discussion.
- 6. M.C.C., 1784-1831, IV, 61, 78.
- 7. Evening Post, June 28, July 2, 10, 11, 1804.
- 8. Documents Relating to the Board of Health, 19; Evening Post, February 11, 1807; The Medical Repository, 3d hexade, I (1810), 298-99.
- 9. Documents Relating to the Board of Health, 5-6.
- 10. M.C.C., 1784-1831, IV, 107, 140; Evening Post, December 21, 1805; Documents Relating to the Board of Health, 91-96.
- 11. Evening Post, August 2, 1803.
- 12. N.Y. State Laws, 29th sess., chap. 79, March 21, 1806, IV, 411; chap. 126, April 2, 1806, IV, 514-20; chap. 176, April 7, 1806, IV, 630; The Medical Repository, 3d hexade, II (1811), 378.
- M.C.C., 1784-1831, IV, 679-80, V, 589; Extracts of the Various Laws Relative to the Preservation of Health in the City of New-York (New York, 1811), 13-16.
- Evening Post, July 24, August 2, 3, 1809; N.Y. State Laws, 32d sess., chap. 66, March 10, 1809, V, 461; 33d sess., chap. 21, March 2, 1810, p. 6; M.C.C., 1784-1831, VI, 49.
- M.C.C., 1784-1831, VI, 440, 472; Evening Post, January 10, 1811; N.Y. State Laws, 34th sess., chap. 175, April 8, 1811, VI, 246-54.
- Evening Post, February 26, 1811; Extracts from the Various Laws, 3-5;
 M.C.C., 1784-1831, V, 21-22, 514.
- 17. The Medical Repository, new series, V (1820), 99-100; M.C.C., 1784 1831, VI, 681, VII, 664-65, VIII, 250, 257-58, 364.
- 18. M.C.C., 1784-1831, IV, 5, 41, 56, 59, 72, 80, 105, 125, 320, V, 629, 691, VII, 662, XI, 474-77.
- Evening Post, December 7, 1813, January 16, 1816; N.Y. State Laws, 37th sess., chap. 161, April 15, 1814, III, 169-70; M.C.C., 1784 1831, VIII, 384, XI, 474.
- Evening Post, August 4, 1808, October 11, 1811; M.C.C., 1784-1831, VI, 722.

- 21. N.Y. State Laws, 34th sess., chap. 175, April 8, 1811, VI, 246-55.
- 22. M.C.C., 1784-1831, VI, 547-49; Susan W. Peabody, "Historical Study of Legislation Regarding Public Health in the States of New York and Massachusetts," Journal of Infectious Diseases, Supplement No. 4 (1909).
- 23. Evening Post, September 17, 20, 1811.
- 24. Ibid., August 8, 1816.
- Ibid., May 20, 1818; Letters from John Pintard to his Daughter, 1, 80-81;
 M.C.C., 1784-1831, IX, 422.
- 26. Evening Post, July 10, 12, 15, August 19, September 15, 1819.
- 27. Ibid., September 21, 23, 1819.
- 28. The Medical Repository, new series, VI(1821), 131-32, 351-53, V (1820), 245-56.
- 29. M.C.C., 1784-1831, X, 721, 735-36; N.Y. State Laws, 43d sess., chap. 229. April 14, 1820, V, 208-23.
- 30. M.C.C., 1784 1831, X, 758-59.
- 31. The Medical Record, XXIII (April 14, 1883), 419-20; David Hosack, Observations on Febrile Contagion and on the means of Improving the Medical Police of the City of New York (New York, 1820), 7, 27-28.
- 32. Hosack, Observations, 32-49.
- 33. Evening Post, January 10, 17, 18, 20, 1821.
- 34. Ibid., July 17, September 14, October 16, 1821.
- 35. A History of the Proceedings of the Board of Health, of the City of New York, in the Summer and Fall of 1822. . . . (New York, 1823), 9; Evening Post, August 16, September 5, 1822.
- 36. Evening Post, August 26, 27, September 21, 24, 25, October 14, 1822.
- 37. Ibid., September 24, 1822.
- 38. Ibid., November 13, 1822; M.C.C., 1784-1831, XII, 557-60.
- 39. Ibid.
- 40. Evening Post, November 15, 1822.
- Paschal N. Strong, The Pestilence, A Punishment for Public Sins (New York, 1822), 1-26.
- 42. N.Y. State Laws, 46th sess., chap. 71, March 21, 1823, VI, 64-82.

8

Street Sanitation and Nuisances: the Losing Battle

The 1790s were years of undoubted progress in civic administration. A rising consciousness of civic responsibilities was reflected in the emergence of effective quarantine measures and of a permanent health office, and in the efforts to remove accumulated filth. The first twenty-five years of the nineteenth century also witnessed marked advances, but in the general area of street cleaning, sewage removal, and general sanitation, the City Fathers fought a losing battle. Their failure can scarcely be attributed to oversight or lack of knowledge; complaints constantly poured into the City Council, and newspaper columns were filled with outraged editorials and indignant letters. Committee after committee investigated the street-cleaning situation, and invariably agreed upon the sources of trouble and what needed to be done. The Council responded by passing ordinance after ordinance. Indeed, a mere scanning of the Council's legislative measures on sanitation conjures up a vision of New York as aseptic as a Hollywood costume picture. The true scene, unfortunately, was quite different. The problems arising from the years of neglect during the Revolutionary period had been compounded by the explosive population increase, and the small clean town of colonial days was gone forever.

In June of 1793 an English army officer wrote: "The situation of the city is naturally healthy and pleasant, but the intolerable negligence of those in office, whose business it is to direct and see the streets, docks, and slips kept clean, is such, that some of the streets, and, I believe, every dock and slip, (where small craft lie,) are so abominably filthy, that any person, coming fresh from the Country or off the water, can scarcely refrain from sickness in

passing them, occasioned by innumerable Kinds of the most nauseous stenches that abound in warm weather." This was New York City on the eve of what was to be a twelve-year assault by yellow fever.

When, in September, the danger became immediate, the City Council bestirred itself and collaborated with a volunteer citizens' committee. The primary concern of this group, however, was to keep the disease out by quarantine restrictions. The Council did make a gesture in the middle of September by authorizing the Mayor to appoint "respectable Inhabitants in each Ward" to help officials carry "into strict execution the Law for preventing Nuisances in this City." Two weeks later, at the request of another citizens' group, the Mayor ordered the fire-fighting equipment to be used to help flush out the gutters and sprinkle the streets. These actions were not likely to relieve the conditions described by one citizen. Among the other nuisances encountered in the streets, he wrote sarcastically, were "dead horses, dogs, cats, and other dead animals lying about in such abundance as if the inhabitants accounted the stench arising from putrid carcasses a delicious perfume."2

Fear of yellow fever led to the establishment of a city Health Committee, but its members felt that the danger lay outside New York. Although the Committee was exceedingly vigilant in enforcing the quarantine, neither in 1793 nor in 1794 did it make any reference to the deplorable sanitary conditions within the city. The only action taken by the City Council in 1794 was to pay one James Culbertson about \$125 for superintending the cleaning of the streets (a gross overpayment, judging by contemporary descriptions!), and to appoint constables and marshalls to see that the street-cleaning and public nuisance laws were properly executed. No doubt, as a reward for their zeal and enthusiasm, on July 20, 1795, the Council ordered that the same men be reappointed. Whatever the occasion for the Council's action, it evidently had nothing to do with the manner in which the men performed their duties, for a grand jury report issued early in August presented a serious indictment of sanitary conditions. It found the city's markets "loaded with filth and garbage to a degree that excited the mingled emotion of fear and disgust . . . ," and the streets and

wharves "in a very neglected and offensive state. . . ." The grand jury concluded its report by proposing that regular scavengers be hired in each ward to remove all nuisances.³

By this date, August of 1795, yellow fever had already appeared in the city, and the Council felt compelled to face up to the issue. A committee was appointed "to Contract and agree for Scavengers to clean the Streets in such manner as they shall think proper &c.," and "the Magistrates" were urged to enforce existing laws. Subsequently another ordinance was passed specifying the procedure for cleaning the streets. The heavy casualties inflicted by the epidemic in the summer and fall of 1795 led the Medical Society, whose members generally believed that vellow fever was the product of domestic environmental conditions, to warn the City Council early in 1796 about the general lack of sanitation. The stress placed by the physicians upon the disease-causing effects of foul miasmas led to complaints about the stagnant pools on many vacant lots. The Council asked the Health Committee to prepare a petition to the State Legislature requesting authority for the city to deal with this and other sanitary matters. As noted in the previous chapter, a state law passed in April conferred upon New York City the right to pass the necessary ordinances and regulations, but placed a one-year time limit upon all such measures.4

In the spring of the following year, 1796, the City Council ordered its members to examine the streets and lots and make recommendations for removing nuisances. On May 16 a significant step was taken when it was resolved that the aldermen and assistant aldermen should "employ a proper Person in their respective Wards to superintend the cleaning of the streets," and to hire carts for removing any "Dirt & Filth" collected. Up to this time, there had been either one or two superintendents of scavengers; now there was to be one in each ward, and presumably he would be directly responsible to his individual councilman. The Council next turned its attention to the many protests against low-lying lots and foul-smelling slips. Several petitions requesting that the Exchange Slip be filled in described it as offensive and dangerous to health. However, counter petitions were also submitted, pointing out that the slip had considerable economic value and urging that it be cleaned out. The Council deferred to economics and had the slip dredged.⁵ During the summer many petitions were received asking that various sunken lots be raised. Health Officer Richard Bayley gave support to these pleas by laying part of the blame for the sickness in the Whitehall Slip area to "the sunken state of many of the Lots in that Quarter." The City Council responded by ordering the raising of this low-lying land and proposed the use of city funds to facilitate the process.

Later in 1796 Dr. Bayley attributed the sickness during the preceding summers to stagnant pools, filthy conditions, noxious exhalations, and the dirty and crowded condition of the poor. He asserted that the Council had not put into effect the state law authorizing the city to remove nuisances. However, the City Council had appointed a Health Committee, and it had worked closely with the newly organized Health Office. Under the leadership of John Broome and John Oothout in the summer of 1796, considerable progress had been made in filling in low-lying property, cleaning the slips, and removing other general nuisances.⁶

By 1797 the health commissioners and the City Council were cooperating fully, and strenuous efforts were made to remove the worst conditions. Without awaiting the advent of hot weather, in April the Council ordered that Whitehall, Coenties, Wall Street, Fly Market, and Peck Slips "be dug out & cleared of Filth without delay." Owners of various waterfront properties were instructed to raise the level of their land "with good wholesome Farth," and this same material was to be used in leveling streets in the neighborhood of certain slips. A more important step was taken in May when a committee was appointed to draw plans for a common sewer leading along Chambers Street from the Almshouse, the Gaol, and the Bridewell. A contract was let in August, and the project was finished about six months later. While this was going on, the health commissioners and the Health Office were zealously directing the City Council's attention to unsanitary conditions and seeing to it that they were corrected.7

The next spring, 1798, a new state health law gave the health commissioners, whose chief function up to this time had been administering the quarantine laws, considerable authority over internal sanitary matters. At the same time it empowered the city to regulate the construction of piers and wharves. The health commissioners did not hesitate to act upon their new powers, and,

in attempting to clean up the city, were given the full backing of the City Council. An unprecedented campaign got under way to eliminate stagnant pools, clean out the slips, and remove all nuisances. For example, when the health commissioners complained of a swamp between the Fresh Water Pond and the Hudson River, the councilmen for the Sixth Ward were directed to see that it was drained. The enforcement of the quarantine laws was carried to a new peak, and the quarantine was supplemented for the first time by a citywide sanitary program. Nonetheless, yellow fever still gained entrance in 1798, and New York experienced the worst yellow fever epidemic in its history.

The end of the outbreak brought still another study of health conditions. The report of the joint committee, which has already been discussed in previous chapters, covered every aspect of sanitation and recommended strong governmental action to keep the city clean. Significantly, it called for transgressors of the sanitary laws to be fined immediately "on the evidence of the Inspectors. . . ." "Experience has sufficiently taught," the report continued, "that the tedious formalities of ordinary lawsuits will by no means answer even the purposes of cleansing the streets and gutters-inconveniences which have been severely felt and strongly represented." While a stern enforcement of sanitary laws might eliminate many nuisances, the report declared, the streets could be kept clean only if the city would hire enough carts and boats to remove all garbage and rubbish. It further recommended that all slips be filled in unless essential to commerce. The street commissioners were to be responsible for leveling and grading streets. Finally, the common sewers were to be graded, and a sewer inspector hired to keep them clean.9

Shaken by the events of 1798, the city requested that it be given broad authority to cope with sanitary matters, and on March 30, 1799, the State Legislature complied. The city was given the right to regulate streets, wharves, slips, and all vacant property. It could appoint inspectors of lots who would have full authority to enter and inspect any building or piece of property during daytime. Alterations required by city ordinances were to be assessed against the property-owner, except in the case of the slips where the city was to pay one-third of the cost. Public officials were empowered

to destroy all putrid meat, fish, or hides found within the city. Finally, the procedure for collecting fines was simplified.¹⁰

Even before this law was enacted, the Council had set up a committee to confer with the Commissioners of Health on the best measures to be taken for cleaning the streets. On April 10 the Council adopted the committee's report, which provided for dividing the city into three districts, "each to be Swept and the Dirt Removed twice a Week in daily Rotation." Carts were to be hired to remove the dirt and manure, which was to be loaded directly on vessels or else placed at temporary sites. To ensure that the accumulations at the temporary sites did not remain too long, two additional vessels were to be hired whenever needed. Each day two men with carts and bells were to drive through the two districts which were not being swept to pick up garbage and offal.¹¹

Exactly one year earlier, April 10, 1798, the Council, noting that the business of superintending the streets had increased beyond the capacity of its special committee, had authorized the appointment of two street commissioners. Their duties, as defined at a subsequent Council meeting, were concerned largely with street repair and maintenance, and only indirectly with sanitation. The city ordinance of April 10, 1799, now directed that the two commissioners must examine all lots, cellars, sewers, sinks, and yards, and report which ones "should be filled up, Altered or Cleansed." Their responsibilities also entailed enforcing the sanitary regulations and superintending the dredging and cleaning of slips. In effect, the city assigned to the street commissioners the duties and powers of the inspectors of lots. 12

The system now devised for cleaning the streets seemed an ideal one from every standpoint. Not only was the city assuming more responsibility, it would cost the rate payers virtually nothing. Since most of the street dirt consisted of garbage, offal, and manure, all organic material, the city proposed to regain the cost of cleaning the streets through the sale of fertilizer. Under the able leadership of Commissioners Richard Furman and John Bogert, the streets and general sanitary condition of the city were much improved. On April 29 the commissioners reported that some citizens had refused to comply with orders to improve their lots and asked for a \$100 fine for noncompliance. At subsequent

Council meetings they reported similar problems, such as the need to fill in specific cellars or slips, or for a gutter on Bancker Street. In every case, the Council promptly passed the required ordinance. With two zealous commissioners and a sympathetic Council, the system worked quite well. The chief weakness lay in the limited time duration of the city ordinances, and the necessity for passing a special ordinance for each individual case. New York was growing too rapidly for the municipal council to devote so much attention to what were essentially administrative details. Nor could any political system guarantee that all officials would be honest and efficient.

In 1800 and 1801 the state conferred additional powers upon the city with respect to the regulation of streets, buildings, lots, and wharves, and granted it the right to construct common sewers, drains, and vaults. In connection with the latter, the city's main concern was to drain cellars and remove surface water. Two citizens in 1798 requested permission to connect private drains to the common sewer on Broad Street, but their petitions were rejected on the grounds that the common drain was intended to carry off water from cellars but not from yards. The thoroughness with which the civic authorities were attending to sanitary affairs was undoubtedly stimulated by the annual recurrence of yellow fever during these years. Newspaper editorials, too, kept reminding officials and the public of the relationship between dirt and disease, while the letters and articles often discussed ways for preventing or minimizing the annual fever. 15

The condition of the privies, a major aspect of any sanitary program, greatly benefited from the new drive for sanitation. The city was determined to get them cleaned out, and thus prevent them from overflowing. The commissioners or lot inspectors were quite vigilant in checking on privies, and the Council firmly backed up their efforts. In the spring of 1800, The Medical Repository, in mentioning that the city had required all privy pits and sinks on the East Side to be cleaned out by April 1, stated that the work was done largely by Negroes, who were attracted by the high wages. Most of them, the article continued, had been sick and some had died. The symptoms, which The Medical Repository ascribed to their exposure "to the effluvia of human or-

dure," included catarrhs and redness of eyes, nausea, vomiting, pains in the belly, bloody stools, and fever-enough symptoms to have encompassed half a dozen disorders. The following spring the Council again acted to prevent the privies from becoming nuisances. As long as the City Council and the commissioners were conscientious, conditions remained under control, but the least slackening in their efforts was enough to permit the situation to get out of hand. In 1803 the Street Commissioner presented a report from Rufus King, the ambassador to England, on the sewer system of London. The City Council turned the information over to its Health Committee, but nothing further seems to have come of it,16 Sewers at that time were designed to carry away surface water, which was foul enough in itself, rather than human fecal matter, and until privies could be eliminated, the sewers had only a limited value. Ample supplies of water and cheap effective water closets had to become general before the privies could be replaced. Until then, they were to remain a danger to health and, very often, an outrage to esthetic sensibilities.

The new street-cleaning system seems to have worked, although occasional complaints were made. In the summer of 1801 a citizen recommended that the streets be swept in the evening, when few people were abroad, rather than in the morning, and that the Manhattan Company be required to provide water for keeping down the dust. In view of "the most extensive and lucrative" privileges given to it, the writer of the proposal said that he could see no reason for the water company to object. Shortly thereafter the Manhattan Company agreed to supply water, but at its usual rates. The Council at first voted to spend a maximum of \$500, but a week later appropriated \$750. The water was to be used "for the cleansing of the gutters, daily, in the several streets in this City." The temporary sites for storing the street dirt often led to protests from nearby residents, understandably bothered in warm weather by the overripe odor of festering garbage, manure, and offal. In an effort to meet this complaint, it became customary in summer for the Council to pass an ordinance decreeing that no street dirt could be deposited on any of the city wharves without the consent of the Street Commissioner.17

With the responsibilities of street commissioner divided be-

tween two men, difficulties soon arose, and in September of 1802 the Council appointed a committee to look into the matter. This committee decided on a fairly drastic revision of the street administration. It recommended that a single street commissioner be appointed and that his duties relate exclusively to the maintenance and repair of the streets. Street cleaning was to be a separate function in the hands of a Superintendent of Scavengers, who was to employ as many scavengers as were necessary "to sweep the heads of slips and all public ground, and to clean, carry away, and sell all filth, dirt and rubbish as may be found in the streets which is not by law directed to be otherwise removed. . . ." The Superintendent was also responsible for prosecuting any "breaches of ordinances relative to incumbrances, filth and nuisances placed in the streets and highways contrary to law. . . ." The City Council accepted the report and promptly put its recommendations into effect.18

Dr. Joseph Browne was appointed the new street commissioner on September 13, 1802. Browne was evidently a forceful individual, for when he was asked to investigate a proposal made by the City Council to dig a canal or open sewer from the East to the Hudson River, intersecting with the Collect, he emphatically condemned it. The tidewaters of the Fast and Hudson Rivers would not be strong enough to wash away the sewage and filth, he asserted, while the water of the Collect would be useless for this purpose. The Collect already had fifteen feet of mud, and, he added, "there is no doubt the health of the City, in a few years will require it to be filled up with pure earth. . . ." If the proposed canal were built, he was certain that it would become a menace to public health. 19

Even under the new system, the responsibility for street cleaning still rested with individual citizens, who were required twice a week to sweep the dirt into piles. In June of 1803 an article in *The Medical Repository* declared that as long as this system remained, the streets would never be clean. Most residents, the author wrote, left the job to their servants, who tended to neglect it "from idleness and indifference." His solution was to hire city employees to perform the task, "and then, instead of being an advocate for neglect, the house-keeper will become an inspector to complain of the omission." If the well-to-do had difficulty keeping

their streets clean, one can only wonder what conditions were like in the crowded slum areas.²⁰

To facilitate the work of the scavengers, an ordinance in 1803 forbade anyone, under penalty of a two dollar fine, to throw shells, ashes, einders, manure, garbage, and offal into the streets except on the days specified for pickup. None of this material nor any human excrement could be thrown into the slips or docks under a penalty of ten dollars. Whatever merit the new system may have had in keeping the city clean, it had obvious advantages from the standpoint of the taxpayer. The Superintendent of Scavengers, in rendering his accounts for 1803, showed a total expenditure of about \$26,000, which included the cost of dredging the slips, the salaries of street inspectors, and all other salaries, wages, and costs. The income, on the other hand, amounted to slightly over \$29,000 from the sale of manure and about \$350 from fines. Thus the city was actually making a profit on its street-cleaning operation.²¹

Precisely because the manure was valuable, the street cleaners tended to become deflected from their original purpose. The superintendent naturally wished to present as favorable a financial report as possible, and inevitably there was a tendency to place too much emphasis upon collecting manure and too little upon removing rubbish. In addition, it was not always possible to take the manure and garbage directly to the boats or scows for removal, and it was often piled up on the wharves, much to the disgust of those living in the neighborhood. Both of these problems were discussed in the Council on July 10, 1804, and an ordinance was passed placing all manure piles under the strict supervision of the Superintendent of Scavengers, In this instance, the Council was also dealing with the additional nuisance created by livery stables and dairies, which derived considerable income from the sale of manure. In warm weather these festering manure piles drew swarms of flies and their odor permeated the area for blocks around. Complaint was also made at this same meeting that the scavengers were picking up either the rubbish or else the material suitable for manure, so that the streets were never completely clean. The City Council directed that the Superintendent of Scavengers have all material collected from the streets at one time. If the scavengers used separate carts for rubbish and manure, two carts must simultaneously traverse the streets. Whatever the method, the superintendent was told to see that the whole of one street "shall be fully cleansed at the same time."²²

Relatively few complaints were made for the next year or two. The newspapers grumbled in the spring of 1805 over the failure of residents to sprinkle before sweeping, and City Inspector John Pintard mentioned a few weeks later that he had received many reports about the streets being polluted with the carcasses of dead animals, but the City Council congratulated itself in December of 1805 on the success of its experiment with cleaning the streets at public expense. Two months later the Council rather surprisingly reversed itself and passed a new ordinance dividing the city into six districts and ordering that the privilege of collecting street dirt and manure was to be sold to the highest bidder. If the city could make money at the job, presumably individual initiative could do even better. The new ordinance was passed on February 17, and on March 3, 1806, the Council resolved to abolish the office of Superintendent of Scavengers, Subsequently a supplementary ordinance created the position of Superintendent of Streets. His duties were to see that the citizens swept the dirt into piles on the allotted days, and that the street contractors performed their obligations. He was also made responsible to the City Inspector's Office and instructed to obey all orders given by the City Inspector.²⁸

Since there was considerable profit in collecting street manure and none in removing rubbish, it is not difficult to envision the results of turning street cleaning over to private contractors. Understandably, a grand jury report in June of 1806 was highly critical of the piles of dirt and rubbish in the streets and the deplorable condition of the pavement and gutters. Whatever the loss from the standpoint of health and esthetic considerations, financially the city was still ahead of the game, making a profit of \$1,230 in 1806. After what must have been some interesting political manipulations, in 1807 the City Council gave the entire contract to Stephen Hitchcock, the Superintendent of Streets. Under his management, the city received a total of \$1,700, Just how much Hitchcock cleared is not mentioned in the City Council minutes, but it was enough to arouse the cupidity of other would-be contractors. On November 21, 1808, the City Council appointed a four-man committee to determine "whether it would not be more conducive to the public interest to farm out the Streets and Manure in this city, than to continue the present system under a Superintendent." After studying the accounts of the Comptroller and the Superintendent of Streets, the committee, which was probably more interested in dividing up the spoils than in sanitary or esthetic considerations, recommended farming out the manure contract. The Council divided evenly on the proposal, and the Mayor voted to continue the existing contract with Hitchcock.²⁴

During 1809 the Council repeatedly ran into problems with Hitchcock in his capacity as the manure contractor. His successor in the superintendent's office complained to the Council in June that Hitchcock was not removing rubbish from the streets. After a debate, in which one alderman proposed repealing the entire street-cleaning ordinance, the question was referred to a committee where it appears to have been quietly tabled. The criticism does not seem to have bothered Mr. Hitchcock much. In December the Council warned him that, unless he immediately removed the piles of dirt in the streets, it would take legal action. These criticisms led to another committee investigation of street cleaning. On March 12, 1810, the committee reported in favor of returning to the former system of having the city handle the work. The Council concurred with its committee's findings and reenacted the 1808 law.

Stephen Hitchcock, however, was not easily defeated. Whether or not his lucrative contracts had made it possible for him to influence people and gain friends on the City Council is hard to say, but in any event, in the balloting for Superintendent of Streets, he won over Walter Furman by a vote of nine to eight. Hitchcock had served as a street official or private contractor for a number of years and had been subject to a constant series of reprimands for neglect of duty. Yet this was the man selected by the Council to run a large-scale operation involving considerable sums of money. Three weeks later the Council, acting upon peritions from citizens, agreed to divide the city into two districts for street-cleaning purposes and to appoint two street superintendents. A new law passed on April 9 called for the appointment of two "discreet and industrious persons of honest fame" as superintendents of streets. The rest of the law repeated the terms of the previous ordinance. In general, the superintendents were responsible for sweeping certain areas and for removing dirt and rubbish piled in the streets, and the residents were to sweep the streets in front of their property and heap up the dirt, garbage, and rubbish on the two days a week assigned for pickup. A number of other provisions specified how the work was to be done, provided penalties for noncompliance, and set forth the arrangements for cleaning the streets in front of such places as uninhabited houses and vacant lots.

Anticipating an old complaint, the ordinance specified that two carts were to go into each street simultaneously so that both manure and rubbish would be removed. Reflecting the value of the manure, no one but those employed by the street superintendents could remove any manure or dirt from the streets. Cartmen who refused to pick up rubbish or who were careless in so doing were to be fined. The law was detailed, well written, and seems to have covered every contingency. By establishing two superintendents, it probably helped appease the supporters of Walter Furman, who, as mentioned earlier, had lost out to Hitchcock in a previous Council meeting. On April 16 he and Stephen Hitchcock were appointed street superintendents. Two weeks later the Council amended the ordinance and divided the city into three districts for street-cleaning purposes, but no change was made in the number of superintendents.²⁶

This system remained in effect for two years, during which time the service seems to have been adequate. In 1810 the Council reprimanded the superintendents once and received several complaints from citizens, but these seem to have been minor. The following year a householder publicly excoriated city officials for the deplorable condition of the streets, declaring that he had never before seen them so obstructed with dirt and rubbish. He attributed these conditions rather sarcastically to "the extreme care and nicety with which the dirt carts perform their business." "Instead of cleaning the streets," he asserted, "their only object is to pick up that particular dirt which will make the best manure, and you may see them every hour in the day exercising their best skill and discernment in separating the heaps so as to take the manure and leave the rest of the dirt behind them." This dirt, he continued, the inhabitants are obliged twice a week under penalty of two dol-

lars to sweep together in heaps, "that it may be again examined, culled and scattered about as before." ²⁶

In January of 1812 the City Council took away from the street superintendents the right to appoint the inspectors of streets. Superintendent Hitchcock was understandably hurt by the possible implications of this move. In March he offered his resignation, citing among other things, that the Comptroller had refused to allow certain charges Hitchcock had submitted. Possibly to his surprise, the Council accepted his resignation, and appointed a committee to draw up a new street-cleaning law. The law, passed on March 30, was almost identical with the preceding one save that it proposed to divide the city into two districts and to contract for the cleaning with two or more individuals. For the next three or four years matters went along fairly smoothly. Annually the City Comptroller's Office would issue public notices requesting bids. Two or three minor changes were made in the street-cleaning ordinance, probably in response to the occasional complaints that were sounded. Financially all was well. In 1815, for example, street expenses, including repair of the roads, amounted to \$4,144, while the sale of manure brought in \$6,600. In January of 1816 when the old problem of the manure piles came to the fore, the Council designated two locations on Manhattan for storing manure and ordered that no more than two hundred loads could be deposited at each of these. At the end of the year a newspaper letter brought up the other perennial complaint about the scavengers' carefully separating manure from rubbish and leaving the latter behind. In European cities, the author wrote, the scavengers are employed to keep the streets clean. "Here," he continued, "I understand that persons give the Corporation considerable sums to have the privilege of keeping the streets always dirty."27

By 1817 the number of complaints increased and their tone sharpened. As a result, in May the Council established the position of city intendant, whose duty it was to "see that the Streets are swept and the Manure &c. removed by the Contractors according to their Contracts. . . ." When Jonathan Pinckney was chosen for the position on May 19, he was instructed to place a complaint box in the office of the street commissioner "for the purpose of receiving communications relative to offences committed against

the [street sanitation] laws. ... "28 Meanwhile, the columns of the Evening Post and other newspapers were filled with protests. An editorial described conditions as a shame and a disgrace and wanted to know why it was that laws "apparently well calculated to answer this purpose . . . do not, in practice, produce the effects expected." A resident on Pine Street asked, possibly ironically, why the city could not use some of the profits from the sale of manure to have the rubbish cleaned up after the contractors had done their work. An editorial note apropos of this letter explained that this already was the responsibility of the street contractors. Another newspaper correspondent, who signed himself "Medicus," wrote a bitterly sarcastic letter, wondering whether the streetcleaning laws had been repealed—since he had seen no evidence of anyone's enforcing them. City Intendant Pinckney was either unable or unwilling to bring about any improvement. An editorial in July declared: "We are inundated with communications upon the subject of filthy streets and public nuisances, . . ." A week later an editorial writer criticizing Pinckney for his failure to prevent the cartmen from driving their horses on the sidewalks remarked that he evidently was no more successful in this than in dealing with the street contractors.29

With the existing system bogged down, in the spring of 1818 the city decided to hire scavengers for the express purpose of sweeping the streets during the summer. A few weeks later an indignant correspondent wrote that after two months' operation by the new street-cleaning system "the result is, that our city never was so filthy, and our streets so offensive as at present." He suggested it might be better to return to the old system of placing responsibility upon the householders. The blame, he said, did not rest entirely with the city, however, for the inhabitants were guilty of throwing their offal and garbage into the streets. After wondering whether or not the citizens knew of the laws against this practice, he commented ironically: "I presume they do, and can only account for it by supposing it to be their intention to [keep] the numerous herd of swine . . . from getting hungry and devouring the children, that mingle with them in their gambols through the streets,"30

According to regulations, the street sweepers were supposed to sprinkle the streets before sweeping, but in practice this was rarely done. In June a group of housewives complained about the clouds of dust aroused by the sweepers, and protested that the streets showed little improvement. The protests brought some improvement during the rest of the summer, but street cleaning was strictly a summer job; all that was attempted during the winter months was a weekly pickup of trash and garbage—and the evidence shows that the contractors honored this more in the breach than in practice.³¹

The summer of 1819 saw all of the old complaints renewed: the sweepers were raising clouds of dust, but leaving most of the dirt behind; the contractors were more concerned with gathering manure than with collecting dirt and rubbish; dead animals were left to rot; and the eartmen were neglecting many streets. Concerning the last complaint, "Sal Volatile" wrote on August 16 that he had not seen the street sweepers on upper Broadway since May. One of the more serious charges against the cartmen was their failure to carry away dead animals. When a servant was refused permission to throw some dead kittens onto one of the carts, the mistress of the house asked the driver what to do with them and was reported to have been told "that she might make a pye of them." The comments of visitors indicate that New Yorkers had good reason to criticize the condition of their streets. Baron Klinkowström, who saw New York in 1819, observed that it was not as clean as comparable cities in Europe. The regulations were ample, he wrote, but few of them were enforced. On the side streets he found dead cats and dogs polluting the atmosphere. The main streets were swept about once every two weeks during the summer, but the alleys and side streets were cleaned only about once a month. He was especially struck by the large numbers of hogs permitted to wander around the streets.32

Late in the summer of 1819 the presence of yellow fever bestirred the City Council into improving street sanitation. One change made in September was to abolish the position of city intendant and turn such duties over to three street inspectors working under the direction of the street commissioner. Despite a temporary improvement in the fall of 1819, the city soon reverted to its former state. Year after year editorials and letters in the newspapers continued to deplore the filthy condition of the streets, while the City Council contented itself with passing ordinances which were seldom enforced. In the spring of 1822 one writer sarcastically observed that there was enough filth in the streets of New York "to supply four cities as large as this; unless, indeed, the desires of their inhabitants were unreasonably covetous and inordinate." The yellow fever epidemic of 1822 brought another temporary improvement, but a newspaper editorial declared in February of 1823 that the streets had not been cleaned since the previous August. The Board of Health explained apologetically at this time that the street contracts made it impossible for the health officials to do anything about these conditions. When the Council, under pressure from outraged voters, attempted to force the contractors to perform their obligations, the contractors asked, and were permitted, to be excused from their contracts.³³

The street inspectors were rightly singled out for much of the blame. One citizen pleaded for the appointment of conscientious and able inspectors "instead of the inert and inefficient men who are generally picked out of the ranks of party to perform such service, and who dare not do their duty for fear of being turned out of office." An editorial in the Daily Advertiser on January 31, 1824, expressed the hope the new Board of Aldermen would weed out the inefficient street inspectors. Two months later the newspaper conceded that the streets were cleaner, but added that the inspectors were still not doing their work properly.34 In June the Board of Health issued an address to the public in which it gave the names and addresses of the nine street inspectors responsible for seeing that all street-cleaning laws were strictly enforced. Whatever temporary improvement this may have brought, by the end of the year the streets had returned to their customary filthy state, and the newspapers were once more in full cry. The next April, 1825, the Council resolved to localize street-cleaning responsibility by appointing a contractor for each of the city's twelve wards. This, too, proved unsatisfactory, and the public clamor against street conditions remained unabated.35

One of the basic problems was the tremendous population growth, which did not permit the evolution of an effective municipal administration to catch up with it. Even with a stable population, the attempt to achieve an effective and more democratic administration would have been difficult, but in a rapidly expanding urban community it was almost impossible. To complicate

matters further, the newcomers to the city were of exceedingly diverse cultural backgrounds. The one element that most had in common, a rural tradition, only worsened the situation. Sanitary practices that might create only minor health problems in a rural community proved almost disastrous in a densely settled city. Throwing garbage out for the hogs or defecating and urinating at large was one thing in a sparsely settled rural area; it was something else in the tenement sections of New York.

By the nineteenth century, the days when the electorate could know their officials personally were gone, and the impersonality of city government, combined with the addition of masses of illiterate voters, made possible the rise of political corruption on an unprecedented scale. The very success of democracy, in terms of broadening the political base, tended to make the middle classes wash their hands of city government. Without strong responsible leadership to enforce laws, the sanitary regulations frequently were meaningless. The public attitude was well expressed by the Evening Post in May of 1820. After giving the main provisions of the street-cleaning ordinance, the Post concluded: "We mention this law as in duty bound; not that we have the most distant idea that it will be enforced, or the penalty for neglect exacted." Whereas in earlier years most criticism had been directed at the city officials or against the contractors, by the 1820s indignant letters to the editor often laid part of the blame upon the public for its failure to observe the laws. One writer declared that although the law required the householders to sweep the dirt into piles and the scavengers to carry it away, "the former is attended to only where convenient," while the cartmen selected from the piles of dirt only those parts "as may be conducive to his own interest, or the health of his hogs. . . . "36 New York City in the early 1790s was a small and not too clean little town; by 1825 it was a fairly large and dirty city.

Notes to Chapter 8

- 1. Struggles through Life, Exemplified in the Various Travels and Adventures in Europe, Asia, Africa, and America of Lieut. John Harriott (2d ed., London, 1808), quoted in Stokes, Iconography, V, 1295.
- Stokes, Iconography, V. 1300; M.C.C., 1784-1831, II, 33-34, 38; Journal and Patriotic Register, October 2, 1793.
- 3. M.C.C., 1784-1831, II, 72, 85, 166; Daily Advertiser, August 13, 1795.

- 4, M.C.C., 1784-1831, II, 169-70, 174, 210, 213; see chap. 6, note 9.
- 5. M.C.C., 1784-1831, II, 232-33, 239; Stokes, lconography, V, 1332, 1335.
- M.C.C., 1784-1831, II, 258-60, 264, 270; Bayley, Letters from the Health Office, 5-9, 10-18, 41-52.
- 7. M.C.C., 1784 1831, II, 336, 352, 379, 395, 400, 405.
- 8. Ibid., 462.
- 9. Ibid., 500-08.
- 10. N.Y. State Laws, 22d sess., chap. 70, March 30, 1799, IV, 395-98.
- 11. M.C.C., 1784–1831, II, 511, 532–34.
- 12. Ibid., 433, 533-34.
- 13. Ibid., 539-40, 554-55.
- N.Y. State Laws, 23d sess., chap. 87, April 4, 1800, IV, 541-43; 24th sess., chap. 129, April 3, 1801, II, 126-32; chap. 80, March 27, 1801, II, 114-20.
- M.C.C., 1784-1831, II, 426; Commercial Advertiser, April 12, July 26, 1799; Nevins, Evening Post, 65-67.
- The Medical Repository, III (1800), 409; M.C.C., 1784–1831, II, 706, 708, III, 426, VII, 726.
- 17. Commercial Advocate, July 21, 1801; M.C.C., 1784-1831, III, 28, 107, 110-11, 566; Evening Post, August 10, 1802.
- 18. M.C.C., 1784-1831, III, 123-24, 129.
- 19. Ibid., 136-39.
- 20. The Medical Repository, VI (1803), 45-46.
- 21. Evening Post, June 15, 1803; M.C.C., 1784-1831, III, 465.
- 22. M.C.C., 1784-1831, III, 566.
- Evening Post, April 18, May 11, 1805; M.C.C., 1784-1831, IV, 119, 141, 151, 204; Evening Post, February 19, 1806.
- 24. M.C.C., 1784-1831, IV, 223, V, 338, 342-43, 407-08, 428, 483-84.
- 25. Ibid., V, 595, 770, VI, 108, 158-64, 172, 184.
- 26. Ibid., VI, 139, 190, 320-21; Evening Post, May 11, 1811.
- 27. M.C.C., 1784-1831, VII, 69, 79, 92, VIII, 386, 406; Evening Post, April 11, 1812, December 23, 1816.
- 28. M.C.C., 1784-1831, IX, 134, 162-63, X, 405.
- 29. Evening Post, May 6, 19, July 12, 22, 31, 1817.
- 30. Ibid., June 23, 1818.
- 31. Ibid., June 25, 1818.
- 32. Ibid., June 16, July 2, 9, August 16, September 9, 1819; Boron Klinkow-ström's America, 62-63.
- M.C.C., 1784-1831, X, 558; Daily Advertiser, March 7, 1822, February 20, March 18, April 15, 22, 1823.
- 34. Daily Advertiser, July 8, 1823, January 31, April 7, 1824.
- 35. Address of the Board of Health of the City of New York, to their Fellow Citizens, June 18, 1824 (New York, 1824); Daily Advertiser, December 14, 1824, May 13, July 1, 1825; M.C.C., 1784-1831, XIV, 458.
- 36. Evening Post, May 4, 1820, August 13, 1822.

Control of the Physical Environment

Although the yellow fever epidemics in the 1790s led to a temporary improvement in the street-cleaning system and to some improvement in the city's general sanitary condition, municipal authorities continued to lose ground in their fight for a clean and healthy city during the first quarter of the ninetcenth century. As noted earlier, the explosive population growth created social, sanitary, and health problems which were far beyond the limited capacity of a local government designed to cope with the affairs of a relatively small town. In almost every aspect of sanitation, conditions were worse in 1825 than they had been at the end of the eighteenth century. The city's bumbling efforts to provide itself with a water supply were frustrated by the machinations of Aaron Burr and his cohorts, and the creation of the Manhattan Water Company served only to delay the organization of an effective water company. The few sewers and drainage canals which were built were totally inadequate for the growing population. Instead of developing an effective garbage collection system, the city alternated between private contractors and a city-operated program, neither of which worked satisfactorily. A major part of the scavenging came to be done by the ever-present hogs, an outrage to the olfactory senses and a menace to life and limb. The most hopeful sign during these years was a growing awareness among perceptive physicians and other responsible citizens of the need for firm and decisive governmental action. But many years of agitation and education were needed before the middle and upper classes were willing to assume their responsibilities.

The Collect, Stagnant Water, and the Drainage Problem In colonial days the Collect had been a fresh water lake or pond situated out in the country. By the Revolution the city's boundaries were moving closer to it. Since any body of water was considered a suitable receptacle for garbage, sewage, and rubbish, the Collect soon lost its pristine purity, and by 1800 it was polluted almost beyond hope of redemption. As the city grew and land became more valuable, individuals tended to fill in and occupy lots along the shores of the Collect. The land was municipal property and the city had instituted proceedings against the squatters several times in the 1780s. In 1792 the city ordered that the Collect be surveyed to prevent further encroachments.¹

With the water becoming dirtier year by year and the shores of the Collect turned into a common dumping ground, the city was forced to take action. In the fall of 1802 a proposal had been made to dig a canal from the Hudson to the East River, intersecting with the Collect. The Street Commissioner had strongly objected, and a committee appointed to study the matter concluded that eventually the Fresh Water Pond or Collect would have to be filled in. In the meantime, its members recommended filling in the municipally owned, low-lying land around the edges. At a subsequent Council meeting the City Comptroller urged the city to purchase an adjoining hilly piece of property belonging to the Van Cortlandts. In leveling the Van Cortlandt ground, enough dirt could be collected to fill in the marshland, thus promoting health and at the same time making the city's land usable.²

The Council agreed with the Comptroller's recommendation and decided further to proceed with filling in the Collect. A year later, in May of 1804, the Council was informed that the project of filling in the Collect was about one-third completed and that negotiations with the Van Cortlandts were still under way. During this time, the city was buying dirt at five cents a load. The work pushed on until 1808, when it was discovered that the shores of the Collect contained peat and that a good deal of the soil made excellent manure. After a delay of a year or so, during which time the city sold both peat and manure, the work pushed ahead, but it was not until 1815 that the Collect finally disappeared.³

The question of the low-lying land around the Collect was part of the major sanitary question, sewage and drainage. A Dr. Sabatier, writing in *The Medical Repository* in 1803, touched on the matter when he proposed that the streets and gutters be flushed with clean water and recommended a system of circular

sewers to carry off all wastes to the rivers. To prevent further contamination of the soil, Sabatier advocated that privy vaults be made air tight and their contents emptied regularly. A far more perceptive analysis was made in a series of letters to the New York Gazette late in 1805. The writer, who signed himself "A Householder," was particularly critical of the standard practice of filling in all low-lying land, which he called the unthinking leveling of Manhattan. In this process, no attention had been paid to the old watercourses, springs, and the natural drainage, with the result that wet cellars and pools of stagnant water could be found throughout the city. He especially condemned the use of garbage and offal for fill, pointing our that this land tended to sink over the years, thus draining away from the wharves and toward the city, rather than in the direction of the rivers.

Since the natural drainage had been disrupted, the "householder" proposed to dig a series of canals running lengthwise through the island so that the tides and river currents would wash away the dirt and filth. In dealing with sunken lots and wet cellars, he pointed out that the whole drainage problem should be attacked simultaneously by a thorough study of natural watercourses. Under the present system, he wrote, the inspectors, by ordering the raising of individual lots, merely caused the water to run from one place to another. Like Dr. Sabatier, he was concerned with sinks and cesspools. His solution was to eliminate them completely and substitute removable tubs with covers; thus none of the contents could permeate the soil. The city, he continued, should establish a sewer system and see that streets and sewers were sufficiently graded to carry away all water and wastes. The author presented a good picture of the hydrology and topography of Manhattan, and one that compares favorably with the excellent study made by Egbert L. Viele in 1859.4 Unfortunately, those who advocated simply filling in low-lying spots won out over those who urged an intelligent and effective drainage system which took into account the watercourses and drainage basins provided by nature.

While "A Householder" was summing up his views, Dr. Edward Miller, the Resident Physician, was preparing a report to the Governor on the yellow fever epidemic of 1805. Dr. Miller was convinced that the disease was generated by a "pernicious exhala-

tion or vapour floating in the atmosphere. . . . " Significantly, he wrote, the fever invariably developed in areas of artificial or filled-in ground, Altogether, almost 132 acres of New York City, 90 on the East River side and 12 on the Hudson shore, he asserted, had been reclaimed from the water. This land had been formed by dumping garbage and refuse and remained constantly damp, since the poorly constructed wharves permitted water to seep into it, and the land, because it was low, received the drainage of the entire city. To make matters worse, he added, the scepage and overflow from privies would soon "underlay with filth a large portion of the city." He, too, recommended a comprehensive sanitary program, which included an adequate water supply, an effective drainage and sewer system, and properly constructed streets, wharves, and privies. Yellow fever or no yellow fever, there were few taxpavers in New York-or anywhere else in 1806-who could even contemplate a program on the scale envisioned by Sabatier, Miller, and others. The result was a continuation of the policy of meeting emergencies with piecemeal measures.5

The Collect Pond typified this approach. The city had begun its fill-in operations during 1803, and the public was more than happy to cooperate in the project, although not precisely in the way envisioned by city officials. A committee reported to the City Council in the spring of 1805 that the Collect was "filled with the bodies of dead animals, and dangerous to the health of the Citizens in its vicinity. . . . " The Council decided to have the carcasses removed, and to continue filling in the head of the Collect with good clean earth. The problem, however, was a recurring one. A grand jury, after viewing the Collect in June of 1812, declared that it had been "made the common place of deposit for dead animals and filth of all kinds," and as such was a public nuisance. The City Council again resolved to have some of the low-lying lots filled in and proposed that both private and city property in the area be enclosed to prevent dumping. Exactly two years later another grand jury presented the same indictment of the Collect, and the City Council, presumably reacting by conditioned reflex, responded with the same resolutions. Since public dumping grounds inevitably raise the ground level, the Collect question was eventually solved, although it created new drainage problems in the process.6

While the Collect was slowly being reduced in size, some provision had to be made for the immense quantity of water it contained. A legislative commission in 1800 laid out Canal Street, designed to run from Collect Street northwest to the Hudson River. In 1811 plans were completed to dig an eight-foot ditch or canal down the middle of the street, but a rather bitter debate ensued over the potential efficacy of the proposed canal. A newspaper letter declared that the rate of descent was not sufficient to carry off all the water and that the adjacent land and cellars would be certain to flood. The opposition was so great that in June of 1812 the Legislature appointed three commissioners to determine the best possible drainage system. The preamble to the measure explained that there was much uneasiness and doubt in the minds of New Yorkers about the proposed Canal Street drainage program. The good faith of the Legislature is demonstrated by the caliber of the commission, since it consisted of Robert Fulton, Eli Whitney, and Cornelius Howard. For one reason or another, nothing seems to have come from the commission's efforts, but in the meantime the canal had been built. In 1816 work was started on converting the canal into a closed drain. The project was held up until the summer of 1818, when it was pushed ahead and completed in 1810.7

The steam engine and the newly created mechanical devices of the industrial revolution had already demonstrated the value of scientific principles, and intelligent and informed men were intrigued by the potentialities of this new knowledge. Since the forces of the industrial revolution were transforming society, it seemed logical that these same forces could be utilized to solve both old social problems and the new ones which the industrial society was creating. Sabatier's suggestion for circular sewers, to ensure a maximum water flow even when the sewers were only partially filled, reflected developments in hydraulics. In 1816 an open letter was addressed to the City Council on the subject of the common sewers. In view of the level terrain in Manhattan, the author asserted, it would be virtually impossible to keep the sewers clean by gravity flow. The best solution was to build a "hydraulic machine" on the East River, and once every twentyfour hours pump a strong current of water through the sewers, thus sweeping away their contents. The word "sewer" was used in the sense of an open drain, since the author concluded: "... what could be more pleasing than to have the gutters well washed our with pure salt water, once or twice a day in warm weather?" 8

Among those who joined in the discussion about the sewers was Edmond C. Genêt, the Citizen Genêt of the French Revolutionary period. Genèt addressed the Literary and Philosophical Society in 1818 on the subject of public health, and devoted much of his talk to a technical exposition on the design, construction, and maintenance of the proposed sewers. He, too, favored the use of water pressure to keep the sewers clean, but he recommended the use of the Manhattan Company's water on the grounds that salt water contained certain animalcular substances which were detrimental to health and a cause of vellow fever. The enclosing of the Canal Street sewer brought a new difficulty to light, that of accumulated sewer gas. In the 1820s the danger was anticipated, not from explosions but rather from the disease-spreading "miasma," A communication from one Ralph Buckley to the City Council in 1822 proposed to purify "the foul air of the Canals or Common sewers by means of Furnaces placed on the opening of the Sewers in the Street. . . ." The "putrid air being made to pass through the flames," he said, "will be rid of their impurity and become innoxious to the Inhabitants. . . ." A motion was made in the City Council a few months later to give Buckley's plan a trial, but it failed of passage.9

The interest aroused by the Canal Street sewer undoubtedly led Dr. David Hosack, as mentioned in Chapter 7, to carry the idea of a comprehensive sewage system to its logical conclusion in 1820 by espousing John Stevens' idea for the general use of water closets and an enclosed sewer system. Two years later, 1822, still one more strong voice was raised in support of a sound sanitary program. Dr. John Griscom addressed an open letter to the Board of Health in which he reiterated and reemphasized the points made by men such as Sabatier, Miller, and Hosack. He called for the renovation and reconstruction of the entire sewer system, and insisted that the nature of privies was such that they must become the object of "public care." He called upon city officials to pay as much attention to the construction of sewers as they did to paving the streets and curbs. 10

In 1820 the Street Commissioner, after being instructed to examine the sewers, reported to the Council that they were in good order save for those on Canal, Collect, and Chapel Streets, which had become partly filled with sand. His findings illustrate one of the major difficulties with the early closed drains. Since they depended upon gravity flow, the current was seldom strong enough to remove solid particles, and periodically the drains had to be cleaned out by hand labor. In design, they were broadest at the bottom, which was usually flat, and arched from the sides to the top to give room for the workers to move through them. While facilitating cleaning, this design minimized the water flow and thus promoted sedimentation.¹¹ Almost without exception the early proponents of sewer systems argued that the use of concave rather than flat bottomed sewers in conjunction with water pressure would obviate the need for much of the cleaning. In the 1820s New Yorkers, however, were not convinced of the need for an entire closed sewer system, nor were they prepared to pay what was thought to be a prohibitive cost for such an undertaking.

Even as the city began to move in the direction of enclosed sewers or drains, it still held firm to the belief that their purpose was to remove surface water rather than sewage. The Council continued to reject all petitions to permit private drains to empty into the common sewers. On November 1, 1819, for example, a specific ordinance was passed prohibiting the use "of any private drain or Sewer leading into any of the public Common Sewers ... for the purpose of carrying off the contents of privies or Water Closets."12 The interrelationship between water and sewerage systems is an interesting one, but water closets could scarcely come into general use until a fairly adequate supply of water was available. The Manhattan Company provided only enough water service to maintain the franchise, for its founders had used the charter primarily as an entry into the banking business. The Company's gross negligence in failing to provide an adequate water supply gave City officials many years of grace before they had to face up to the problem of disposing of large quantities of sewage and waste water.

The visionary ideas of the sanitary reformers were far removed from the views of city officials in 1825. Precisely how far is shown by the reception given to a report by one of the City Council's committees. On June 7, 1825, the committee strongly recommended that the cost of cleaning the public sewers be assumed by the city, instead of adhering to the customary method of charging it to the adjacent property owners. The indirect benefits from clean sewers were shared by all citizens, and hence the cost should come from general taxation. After a heated discussion, in which several aldermen felt it would be "unjust that the expense should be paid out of the city treasury," the report was referred back to the committee for further consideration. The New York City government was under increasing pressure to establish an effective sanitary program and was slowly and reluctantly yielding ground. An occasional canal or open sewer was built or extended, here and there a sewer might be enclosed, but the staunch defenders of the status quo fought every concession to the bitter end.¹³

The Manhattan Company

Except for the first few years of settlement, the water supply of New York had never been good, but by the end of the eighteenth century, as the Collect and other water sources became thoroughly contaminated, it was notoriously bad. Ships in the harbor during these years obtained their water from creeks in the neighboring mainland and often profited by bringing hogsheads of water to the city. In the 1790s New York had recovered from the Revolution, and the City Council again began considering proposals for a water system. There was no dearth of applicants: Zebina Curtis offered to undertake the job in 1794, and the following year three men, Amos Porter, Savrs Crane, and Benjamin Taylor, all made separate proposals for bringing water to the city. The City Council in February of 1796 appointed a water supply committee, and directed it to advertise for specific plans. Accordingly, under the heading, "Tea Water Works," a notice was published in the American Minerva stating that the committee would be happy to consider any suggestions. 14

In December of 1796 Dr. Joseph Browne submitted a memoir on the subject in which he first expressed the view that plentiful supplies of clean water were essential to the city's health. Next, turning to possible water sources, he dismissed the Collect, describing it as that "large stagnating filthy pond . . . which now is

or soon will be the center of this city. . . ." In the first place, he wrote, it could not provide sufficient water even for the immediate future, and in the second place, he did not consider its quality desirable. Already, he noted, it was receiving the filth from many streets and the drainage from vaults and privies. "I am under no apprehension," he declared, "that the Corporation will ever seriously think of forcing the inhabitants to drink the disgusting water of the Collect"—a statement which later must have caused him considerable qualms. The best possible solution, he concluded, was to bring water from the Bronx River. The project would cost about \$200,000, an amount, he said, which was trifling compared to the city's wealth. 15

By May of 1797 the City Council had received several more proposals, including one from Christopher Colles, all of which were referred to its committee. Two eager promoters, Messrs. Newton and Taylor, made a model of their proposed waterworks, and exhibited it in the City Hall for an admission charge of fifty cents. While the water supply committee was evaluating the various suggestions, the Council in May of 1798 appointed two overseers of the public wells and pumps in each of the city's seven wards. The move was a wise one, although the Council members could scarcely have anticipated that most of their constituents would have to rely upon public wells for another thirty-odd years.¹⁶

Judging by the newspapers, the public was solidly behind the Council's efforts. A letter from "A Physician" urging the citizens to back the movement for a good water system ended with the exhortation: "GET WATER INTO THE CITY, WATER WILL WASH AWAY PESTILENCE—AND ONE VISITATION OF THE PLAGUE WILL COST YOU MORE THAN WILL WATER YOUR CITY FROM A DOZEN SOURCES." An article in the Commercial Advocate pleaded with the citizens to push for good water. The author asked how it was that New Yorkers could continue "to drink the nasty wash and slops carted about from the Collect: The Collect! of what? of all the leakings, scrapings, scourings, p—s—gs, &———gs, for a great distance around." 17

On December 17, 1798, the City Council's committee submitted its report. The members had agreed that the Bronx River would "afford a copious supply of pure and wholesome Water,"

and that Dr. Browne's plan for bringing it to the city was the most feasible. As a precaution, they recommended that Mr. William Weston, an English engineer working for the canal companies, be employed to evaluate Dr. Browne's proposal. Because of "the immense Importance of the Subject to the Comfort & Health of their fellow citizens," the committee urged that the city assume full control over the water system. Moreover, the report declared, a private company would not undertake the project "unless upon the Prospect of considerable Gain; and that such Gain must be acquired at the Expence of the City. . . ." The capital could be raised, the report concluded, if the Legislature would make such necessary concessions as granting the receipts from the tax on auction sales.\(^{18}\)

The City Council quickly approved the report, ordered that 500 copies of its proceedings and Dr. Browne's memorandum be printed in pamphlet form for general distribution, and then drafted a bill for presentation to the State Legislature. At this point every prospect seemed favorable, and had the project succeeded, New York would have been the first major American city to ensure itself an adequate supply of good water. Then onto the scene came Aaron Burr, a maligned figure according to one of his biographers, but, judging from the role he played here, a man who may not have been maligned enough.¹⁹

According to Beatrice G. Reubens in her excellent article on Burr and the Manhattan Company, the only banks at this time in New York were dominated by the Federalists, and Aaron Burr knew that the Federalist-dominated Legislature would not grant a bank charter to a leading Republican, When Dr. Browne, his brother-in-law, seemed on the verge of succeeding in his projected water system, Burr conceived the idea of having a private water company chartered as a means to establish his bank. Burr was chairman of the state legislative committee to which the city's petition was referred. When the members of his committee were unwilling to override the wish of the City Council for a publicly owned water system, Burr returned to New York, Here in a series of private meetings, Burr sought to gather support for a private water company, persuasively emphasizing two points. First, he questioned the ability of the city government to raise the large sums needed for a municipal water system without a legislative grant of the auction sale receipts. Second, he expressed doubt that the state would authorize such a proposal, since its own revenues from the city would be affected. The state had already imposed a general property tax for the first time; moreover, the new allotments for the encouragement of schools and the excessively high state expenditures on the fortification of New York harbor, Burr argued, would militate against the prospect of granting any special financial aid to the city. Whether the Legislature actually would have failed to accede to the city's request is an open question. Burr, at any rate, was obviously successful in his arguments for he gained the support of a number of prominent Federalists, including Alexander Hamilton, John Murray, president of the Chamber of Commerce, and Gulian Verplanck, a prominent New York banker.20 Headed by Burr, this group went to see Mayor Richard Varick and expressed doubt that the bill proposed by the city could pass the Legislature. After some discussion, the Mayor suggested that the men put their objections in the form of writing. Subsequently an unsigned paper, ostensibly from Hamilton, was submitted to the Council. The members refused to accept it in this fashion, and the following day, February 26, 1799, they received a communication with Hamilton's signature. Hamilton seems to have sincerely doubted that the State Legislature would take the appropriate financial measures. At the same time, it is clear that he was dubious of this proposal for a governmentowned and -operated utility company. "It is not to be doubted," he wrote, "that it will Promote the Convenience of the Citizens and secure the final Success of the object to let in the aid of a Capital to be created by the voluntary contributions of individuals." In organizing a private company to undertake the project, he recommended a capitalization of one million dollars and stressed that the city should be given the right to buy one-third of the shares.21

Impressed by the arguments of Hamilton and the other prominent citizens, the Mayor and Council on February 28 sent a resolution to the State Legislature expressing their strong interest in the question, but stating that the city officials "will be perfectly satisfied if the objects in View are pursued in any Way that the Legislature may think proper. . . ." Armed with this resolution, Burr returned to the Legislature and proceeded to rewrite the proposed bill to suit himself. He increased the capitalization from one to two

million dollars and reduced the amount the city could invest from one-third to one-twentieth. The crucial change, however, was a clause buried at the end of the charter which authorized the company to use its surplus capital "in the purchase of public or other stock, or in any other moneyed transactions or operations. . . . " When the Legislature granted the charter on April 2, 1799, Burr and his associates were in the banking business. Both Beatrice Reubens and Edward Wegmann agree that Burr used the water company charter to obtain his bank. Stokes also leaves no doubt about Burr's real purpose. Aside from the additional evidence which Miss Reubens brings to bear, the City Council Minutes, in which Mayor Varick reported the conversations with Burr and his associates, speak for themselves. There is no assurance that the Bronx River project could have cleared the many hurdles—obtaining a charter, securing adequate capitalization, and solving the many engineering problems. But thanks to Burr's chicanery, it never had a chance, and the citizens of New York remained without a decent water supply for another forty years.22

While these events were taking place, Engineer Weston informed the City Council that he was strongly in favor of Browne's plan to use the Bronx River, and agreed with him that the water of the Collect was both inadequate and of poor quality. The Council immediately published Weston's report. The Manhattan Company, however, had no intention of tying up its capital in so elaborate a project when more lucrative fields were open. On April 20 it advertised for suggestions as to possible water sources, but its real intentions seem to have been known. An open letter addressed to the Company on April 19 criticized the Company for its contemplated use of the Collect. The author described the polluted condition of this water and warned the Company that its decision could cost thousands of lives. On May 1, even before the Manhattan Company had made any official decisions about its plans for the water system, an open letter in the New York Gazette gave a detailed summary of the events leading up to the establishment of the Manhattan Company, castigated Aaron Burr for his manipulations, and asserted that the sole purpose was to establish a bank. The letter included a list of the names of legislators who had subscribed to the Company, among whom were Chancellor Edward Livingston, whose shares were worth \$100,000, DeWitt Clinton,

\$50,000, and Aaron Burr, \$100,000. Undeterred by this popular clamor, the Company promptly demonstrated the truth of the worst accusations. On May 6, in the face of all evidence showing its undesirability, the Company decided to drill a well near the Collect on the site which had been selected by Christopher Colles almost thirty years earlier. Adding insult to injury, a few days later it opened a banking office. One can only hope that Dr. Browne, who continued in active direction of the Company, had no difficulty reconciling this decision with his original position vis-à-vis the Collect.²³

The outraged letters and editorials in the newspapers at least forced the Manhattan Company to move more rapidly than otherwise might have been the case. A well was drilled at the corner of Reade and Center Streets, a thickly populated area, and the water was pumped to a reservoir on Chambers Street. Although Weston had urged the use of iron pipes, the Company officials, ever conscious of the best interests of the stockholders, decided upon the cheaper hollow logs. And, brushing aside Weston's estimate that New York needed 3,000,000 gallons of water per day, the reservoir on Chambers Street was designed to hold only 132,600 gallons.²⁴

A year or so after the water works went into operation, *The Medical Repository* printed what may have been the only good word ever written about the Company's water. After briefly describing the system, the author commented that in passing through the pipes the water "loses that extreme coldness which renders water fresh drawn from deep wells dangerous . . . and frequently destructive of life." So far, he had not heard of a single death that had been caused by Manhattan water! By this time the Company had laid about six miles of wooden pipes and was supplying over 400 houses.²⁵

City officials soon discovered that the Company's charter had not been designed with the city's interest at heart. No provision was made for supplying municipal needs, and the Council was soon forced to appropriate tax money to pay for flushing the gutters and piping water into the markets. An even more startling omission in the charter was the lack of a provision requiring the Company to repair and repave the streets dug up to lay pipes. In 1801 the Council appointed a committee to confer with the Manhattan Company about repairing the streets, and three years later the city

was still trying to hold the Company legally responsible. The Company's customers were equally unhappy. One of them complained in the summer of 1803 that after going to considerable expense to install water pipes, he, like many others, had not had a drop of water in nine weeks. Very frequently, he declared, no water was available for an entire day, and he asked whether the Company intended to reduce his annual bill.²⁶

In 1804 the City Council once more appointed a committee "to devise an effectual plan for furnishing this City with a more abundant supply of water. . . . " On August 27 the committee was authorized to negotiate the purchase of the water works of the Manhattan Company and, at the same time, directed to explore the Bronx River as a potential water source, but nothing came of these efforts. A more serious attempt was made in 1807–1808. A Council committee on water reported on January 18, 1808, that the Company was willing to sell its water works but that legislative sanction was necessary. A week later a resolution to apply to the Legislature for permission to buy the water works was defeated, when the Mayor cast the deciding vote against it.²⁷ The following day the Evening Post issued an editorial blasting both the Company and the City Council. After giving a brief history of the water company and its banking operation, the editorial declared that all it had done to establish a water system was that some "wells have been dug in the filthiest corners of the town and a small quantity of water has been conveyed in wretched wooden pipes, now almost worn out. . . ." And now, continued the editorial, efforts are being made to pay \$200,000 or \$300,000 "for the benefit of the Stockholders of the Manhattan Company."

After mentioning a report by three Council members which showed that the Company was losing money from its water operations, the editor declared that the city, instead of paying, should be paid for taking over the water works. The Evening Post, as a Federalist paper, was naturally critical of the Democratic city administration, but in this instance, its position was probably correct. The failure of the Company to put enough capital into its water operation and the careless and negligent way in which it was managed undoubtedly did result in a continuing loss. Regretable as it would have been to add further to the profits of the

Manhattan Company's banking operations, the nagging question is whether or not the city had any choice. Either the Company got an exorbitant price for its franchise or else the city continued to struggle along with a hopelessly inadequate water supply. Ironically, virtue won out, thus depriving the stockholders of a windfall—and the city of water.

After this failure, the issue rested for a number of years. The City Council minutes only occasionally refer to water questions. In 1812 the superintendent of the water works complained that the overflowing gutters on Chambers Street were doing "injury to the Water in the Wells," and he was given permission to rectify the situation. His complaint leads one to wonder what effect the drainage from the privies in that crowded district was also having upon the water. A brief advertisement the following year stated that the Manhattan Company had overhauled its machinery and cleaned and repaired its pipes. It suggested that those who had delayed taking water from the Company because of the many difficulties might now try the water service. While the notice is a commentary upon previous conditions, evidently matters improved for a few years. Many, if not most, New Yorkers still continued to use the public pumps, and the City Council's chief concern was to see that these pumps were in good order, to prevent tradesmen from using them for washing horses, fish, or dyes, and to see that no one took more than his fair share of water. Whether obtained from the Manhattan Company or public pumps, the water left much to be desired. Little could be done about the limited quantity, but the citizens did know how to improve the quality. According to one observer in 1819, they added "French brandy or gin to make it safe to drink."29

Late in 1821 the City Council resumed its quest for a decent water supply. Its committee on water reported on April 1, 1822, that the two Rye Ponds, the sources of the Bronx River, could supply a million gallons per day, and \$500 was voted to determine the probable cost of bringing this water to New York. The newspapers quickly supported the proposal, and enthusiastic subscribers praised the action of the Council. A more cynical correspondent, who signed himself "A Friend to Health," reported that he had tried rain water and found it much superior to any water in

the city. He advised his readers to build cisterns—sound advice as it turned out, since the Rye scheme, like a number of subsequent proposals, came to naught.³⁰

In 1823 a set of new schemes was projected. A group of citizens proposed to bring the Housatonic River to New York through an open canal, thereby providing both water and a means of transportation. This idea soon gave way to one for constructing a canal from Sharon, Connecticut, to bring Croton River water to New York. The City Council endorsed the Sharon Canal Company's proposal on March 10, 1823, and recommended it to the State Legislature. The project was feasible, but the ill-fortune that had dogged the city once more intervened. A series of difficulties, which included a shortage of capital, misconduct on the part of the first president, and an expensive lawsuit, plagued the Company, and it was forced to dissolve.³¹

In 1824 the water committee returned to the idea of using the Bronx River, but the resulting plans, for which Engineer Canvass White was paid \$1,100, were presumably filed neatly away. Another private group, the New York Water Works Company, asked for the City Council's support in February of 1825. Strangely enough, the Council's water committee, which previously had favored any and every proposal for improving the water supply, objected strongly. In its report it declared that the water company would dig up the city streets, jeopardize the citizens' right to build vaults, and deprive the city of revenue. The experience with the Manhattan Company had demonstrated that the committee was right in opposing a private company, but its objections were scarcely valid. Unlike its predecessors, this committee expressed no particular worries over the worsening city water situation. The committee's stand delayed matters only temporarily, for at a subsequent meeting the Council declared its willingness to go along with the Company. The discussion proved meaningless, since the charter granted by the Legislature proved defective, and in December of 1825 the stockholders voted to dissolve the Company.³²

One last effort was made in these years. In 1824 a Mr. M. M. Noah had written to the Mayor suggesting that a new type of well-digging machine might enable the city to obtain water on Manhattan Island. The municipal officers did not pursue the matter at this time, but the water company began drilling new wells

on Manhattan. A newspaper letter in 1825, which asserted that the Company was boring for water "with good hopes for success," led another correspondent to respond sarcastically that the performance of the Manhattan Company had "bored us most successfully for many years," Summarizing the embittered feelings of his fellow citizens, he declared that as for the Company getting water from the Croton or Bronx River, "the Mississippi is scarcely more excluded from the circle of their operations or designs."33 New Yorkers understandably despaired of the Manhattan Company. The flow of its water was always uncertain and the quality invariably bad. A circular in 1823, after the Company had been in operation for twenty-four years, stated that it had laid only 23 miles of pipe, and that its pumps, which operated for sixteen hours a day, supplied under 700,000 gallons per day to the Chambers Street Reservoir. The inadequacy of this supply in 1825 can best be seen by comparing it with Weston's previously mentioned estimate in 1708 that the city at that time needed 3,000,000 gallons per day.34 Quite obviously, the Manhattan Company's water operations were designed solely to meet the minimum legal obligations of its charter.

General Nuisances

In addition to the smell from open sewers, foul slips, stagnant pools of water, and the offensive odors arising from garbage, dead animals, and other debris in the streets. New Yorkers had to face a wide variety of other nuisances. The privies, as mentioned earlier, were a constant source of complaint and a real danger to health. The nauscating odors emitted when they were opened for cleaning and their frequent tendency to overflow led to repeated protests. Almost every year ordinances were passed similar to the one in 1803, which required that privies be emptied between 11 P.M. and 3 A.M. in summer and 10 P.M. and 5 A.M. in winter. Even these regulations were of little help during the hot weather. A newspaper editor declared that the stench was so bad that on the hottest nights many citizens became ill and were forced to close their windows. The alternative, which was not to empty them, was even worse. Various proposals were made to improve the construction of privies, one of which, already mentioned, was to replace the sinks with covered removable tubs.35

The attitude of the Common Council was one of cautious support. In December of 1823 Joseph Ives and John Birge proposed that "Air tight Boxes" be substituted for the open tubs and sinks. After hearing a favorable report from one of its committees, the City Council passed a resolution supporting their use. A year later the City Inspector, who had had a chance to see the new privies in operation, reported that they were a great improvement and strongly recommended them. Since he was against coercion, he was opposed to an ordinance prohibiting the use of any other kind of privy, but he noted confidently of the new ones that "their superior utility is gradually forcing them into notice." 36

Butcher and fishmonger stalls were another perennial nuisance. Inured to the odors of their trade, the workers simply threw the offal and entrails into the streets or casually piled them around their stalls for future removal. Repeatedly laws were passed forbidding this practice and requiring the stall owners to keep their work areas clean, but enforcement seems to have been sporadic at best. A city law in 1808 required butchers to raise their stalls eight inches from the floor "so that a broom may be admitted to remove such dirt, filth or rubbish as may be under the same. . . ." A year later another ordinance ordered slaughterers to clean their places of business after killing any animals and required butchers to remove promptly all offal and garbage.³⁷

An ordinance in June of 1810 compelling fishermen to remove their carts from the Fly Market aroused a public dispute which was fought in the columns of the newspapers. An editorial commending the Council for its action declared that for at least two years the fishermen's carts had stood in the most indescribable filth. A writer who signed himself "A Fisherman" claimed that the fishermen would be obliged to go out of business unless the regulations were rescinded. In response, an outraged citizen declared that if the people were familiar with the conditions in the fish market, few of them "could have sat down to a dish of fish with relish or comfort." The fishermen had traditionally shown an inclination to spurn any law which they did not like, he added, and he concluded by praising the City Council for its actions. The sanitary regulations for butchers and fishermen generally applied only in summertime, and even then their enforcement depended upon

either the threat of an epidemic or else an especially zealous group of officials.³⁸

A host of ordinances during these years sought to eliminate minor nuisances. Regulations were made, for example, forbidding citizens to clean fish, or dvers to wash their cloths at the public pumps. The wording of many of these ordinances is a revealing commentary upon sanitary conditions. In 1819 the hatters and dvers petitioned the Council to repeal a section of an ordinance forbidding them "from throwing any filthy or discoloured water into any one of the Streets in the City within 200 feet of any one of the Public Pumps. . . . " A Council committee conceded that this regulation worked a hardship on the craftsmen and the section was repealed.³⁹ In view of the steady scopage from privies and manure piles, the wastes from the dvers must have had only a small impact on the water supply. In any case, industrial wastes of all types were freely discharged into the streets. An ordinance in 1817 declared that waste water from the establishments of brewers, distillers, dvers, soap makers, and so forth could be discharged into the streets only between 8 A.M. and 5 P.M. and that it could not be allowed to overflow the sidewalks. This well-intentioned ordinance conjures up a fascinating picture of the crowded New York streets, particularly those streets in areas where the so-called obnoxious trades were concentrated.40

Two factors had contributed to cleaning up the city during the last years of the eighteenth century and the first few years of the nineteenth: the persistent yellow fever attacks and the growing belief that the disease was propagated, or at least flourished, in dirt and squalor. By the temporary cessation of yellow fever epidemics in 1806, the city had established fairly effective administrative agencies for coping with sanitary and health problems. Within another ten years the old problems of dirt and filth began to reappear, and, when the fever struck again from 1819 to 1822, the city was as bad as, or worse, than it had been thirty years earlier. The role of the vast influx of rural immigrants and the sheer size of the growing population has already been mentioned. Another explanation for this lack of progress lies in the fumbling attempts by the City Council to evolve an effective administrative organization. As new offices came into existence and the City Council steadily

widened its jurisdiction, inevitably considerable overlapping of duties and responsibilities took place.

By 1804 the city had a series of agencies all concerned in some degree with enforcing sanitary regulations. The Street Commissioner's major area was the maintenance and repair of the streets, but he was often called upon for advice on sanitary matters-and the line between maintenance and street cleaning was always a tenuous one. The Superintendent of Scavengers was responsible for removing street dirt, sweeping the heads of slips and other public grounds, dredging and cleaning the slips, and the sale of street manure. The Health Office enforced the quarantine regulations, but it also exercised some authority over cases of infectious diseases within the city itself. The City Flealth Committee, which by 1803 operated as a de facto board of health, had wide authority encompassing all matters relating to health and sanitation. Two city inspectors of lots, responsible directly to the City Council, were theoretically responsible for checking on all cellars, privies, sunken lots, and so forth in search of nuisances. In 1804, as an outgrowth of the activities of these inspectors, the City Inspector's Office was created to gather information about any and all public nuisances and to propose means for eliminating them.

During the next twenty years many changes were made in the various offices, and some of the work was consolidated. Jurisdictional problems, however, were constantly arising. The Board of Health in 1821 notified the Street Commissioner that certain sunken lots on North Street needed draining. He reported to the Council that he felt the problem should be handled by the City Inspector's Office. The Council agreed and directed the latter to attend to it. A committee studying the city's administrative organization recommended in 1823 that the position of City Inspector be abolished and his duties turned over to the Assistant Street Commissioner. The responsibilities of the two positions did overlap and the suggestion had some merit. The Council refused to go along. and instead strengthened the City Inspector's position a year later by providing him with an assistant. Another area involving considerable duplication was the work of the health wardens and the street inspectors, both of whom were primarily concerned with the enforcement of the sanitary laws. In 1825, on the advice of the Board of Health, the City Council solved the problem by designating the nine street inspectors as health wardens.⁴¹

Political and personal considerations, as well as attempts to improve efficiency, played a part in bringing about the welter of changes and modifications in the city government and many were far from beneficial. Moreover, since the ordinances creating many municipal offices had to be reenacted annually, modifying laws was relatively simple, and responsibilities frequently varied from year to year. This factor, combined with the multiplicity of governmental agencies, made it easy for corrupt or cautious officials to pass the buck. Until long experience had shown how to draw the lines of authority more firmly and a certain level had been reached in the evolution of administrative agencies, New York, like other large cities, was bound to be plagued with sanitary problems.

Hogs and Dogs

Among the many incidental nuisances faced by early New Yorkers were the constant presence of packs of dogs and wandering hogs. Dogs in particular were the subject of repeated ordinances. Every summer the Council would pass a law stating that dogs were not permitted loose in the streets between June 1 and November 15 (the dates varied but usually covered the summer and fall months). According to these measures, small fines could be levied against owners, and, under certain conditions, the dogs could be killed. Every summer, too, the newspapers carried reports of successful cures for rabies—even Dr. David Hosack at one time recommended the pimpernel plant as a remedy. The Medical Repository, however, in giving the text of an 1801 law against loose dogs, wisely observed that there was no cure for rabies. For some reason, in 1811, the Council first passed a law prohibiting dogs from running at large, and then amended it to exclude the Lamp District from its provisions. Just why that area should have been exempted is not clear.42

Unless a mad dog was reported, the enforcement of the laws was lackadaisical at best. In the summer of 1814 a child died of rabies following a dog bite, and a concerted drive was made. The law at this time specified that the dog collectors could kill any animal outside the Lamp District and that any citizen could kill a trouble-

some dog. The public, then as now, did not take kindly to the dog catchers, and the police office periodically warned children and apprentices from interfering with the work of city officials. The sporadic drives to kill off all animals found at large did not always solve the dog problem. A sarcastic letter in one of the papers commended the city, on June 29, 1819, for attempting to fill up vacant lots with dead dogs! At the same time other indignant correspondents accused the cartmen of dumping cartloads of dead dogs upon any available open ground. An editorial two weeks later asked the City Inspector to do something about the dead dogs and other animals lying at the foot of the Battery to "the extreme annoyance and disgust of those inhabitants who reside in that vicinity." Dead or alive, dogs were a constant source of controversy in the nineteenth century and still remain a problem today.⁴³

Hogs, which had been a major irritation in the early colonial history of New York, do not seem to have caused much trouble during the latter part of the eighteenth century. It is true that hogs had been banned, but the mere existence of a hog law was not likely to keep them off the streets. Other than occasional protests, it was not until 1816 that pigs became a significant public issue. By more than a coincidence, this date marks the beginning of a period when street cleaning was reaching a new low, and hogs were at least as effective scavengers as the street contractors. Indeed, they may have been more effective judging by a petition from the inhabitants of the Seventh and Tenth Wards in 1822 asking that their wards be exempt from the hog law on the grounds that the garbage carts rarely ventured into the streets "which makes it more necessary that the swine should run at large to eat the garbage thrown into the Street. . . ." The Council, recognizing the justice of the complaint, promptly amended the law to exclude these two wards. That the contractors were supposed to send their carts around regularly or that it was against the law for citizens to throw garbage and refuse into the street apparently never entered into consideration.44

A second factor in the rise of the hog population was the widening of the electorate. Aldermen from tenement districts where pork was a basic item of diet felt the same warm regard for the hogs as they did for their constituents. A city ordinance passed in 1816 shows this changing attitude of the elected officials.

Whereas swine formerly had been prohibited from roaming the streets, in theory if not in practice, the new measure merely required that pigs must wear a ring through their noses to prevent them from rooting up the pavement. An editorial criticizing the City Council for failing to act upon a proposed hog law in 1817 mentioned that had the law passed, it would have caused hardship for the poor who would have been compelled to kill their pigs at a time of high prices. When the Council again refused to take up the matter at its next meeting, the newspaper attributed its action to the forthcoming election. A couple of years later another editorialist declared that the practice of turning hogs loose in the streets was much favored by "the more indigent class of the community" and that to oppose it "would be as much as an alderman's popularity is worth...,"45

In the ensuing years the newspapers were filled with ironic, sarcastic, and often bitter denunciations of the City Council for its refusal to do anything about the swine. The Evening Post suggested that those councilmen favoring the pigs should form "The Hog Ticket." One correspondent, who signed himself "Vox Porcorum," addressed his letter to "our faithful friends and benefactors, the common council of the city of New-York." After thanking the Council for the kind interest it had shown in hogs, the letter explained that the "streets have become so overcharged with mud and mire, that no short-legged hogs . . . can make their way through them. . . ."46

Loose hogs were always a nuisance and frequently a danger. Reports of persons being knocked down or carriages being upset by large pigs were common, and on occasions little children were attacked. In 1819 a large hog seized a small child, dragged it across the street, and was preparing to eat it when, fortunately, the mother intervened. With respect to some houses on Nassau Street in which pigs were kept, a citizen wrote that the "stench is insupportable." A year later an editorial writer mentioned that he knew of one man who "was in the habit of sending out of his filthy cellars, or other place where he kept them, no less than forty-five of these animals daily."⁴⁷

In 1821 a state law gave the city full authority to impound or prevent hogs from running at large. However well-intentioned the law may have been, it could do little to free the streets from swine. It was not that the City Council lacked power, but rather a reluctance to use it. The purpose of the state law may have been to save face for those aldermen whose constituents opposed any restrictions. In any event, it accomplished little. In 1825 one of the aldermen, in moving that the street inspectors be directed to enforce the hog law, remarked that the present ordinance "was no more regarded than if there was no law on the subject." The Council, in its usual fashion, courageously deferred taking a stand by referring the matter to a committee. The city seemed to be caught in a vicious cycle; as long as garbage was tossed into the streets, the hogs flourished, and as long as hogs roamed the streets, it was much simpler to throw garbage into them.⁴⁸

Burial Grounds

Under the terms of their original charters, churches were given the right to establish burial grounds and to build both private and public vaults. As the population expanded and the burial grounds became crowded, the churches often successfully petitioned the city for the right to extend their burial vaults under the streets and other public property. Repeated complaints were made about the foul odors emanating from the burial grounds, but it was during the yellow fever epidemics that residents living in the immediate vicinity of gravevards were usually most vociferous in their protests. In light of the nauseating descriptions of the vaults and cemeteries during the summer months, one might well wonder why the churches were so insistent upon their right to continue burying in the overcrowded gravevards. Two factors account for their stand, and it is difficult to say which was the more important. Burials were an important source of income both to the churches and to the sextons, a source which they were not willing to surrender without a fight. A second consideration was the natural desire of church communicants to be interred beside their families and forebears. The struggle against the churches was led by the sanitary reformers, large sections of the medical profession, and those citizens who had to endure the stench from adjacent burial grounds.

The opening round of the fight began late in 1798 when a three-man committee of the New York Medical Society studying

the causes of the yellow fever epidemic recommended a complete prohibition of burials within populated areas. Subsequently the joint committee, which was formed by the Medical Society, the Chamber of Commerce, and the City Council, spoke out firmly in support of this stand. No one took issue with these statements, but nothing came of them either.⁴⁹ The attack was renewed in 1806 when the Board of Health officially recommended to the City Council that "the interment of dead bodies in the City ought to be prohibited." The Council approved the report and petitioned the State Legislature for the authority to take such action. When the Legislature acceded to the request, the city was ready to start moving.⁵⁰

In the usual roundabout way in which public nuisances were corrected, Dr. Douglass, one of the health commissioners, reported to the Board of Health that the vault of the African Zion Methodist Episcopal Church was emitting "a smell which was very offensive to the neighbors." James Hardie, secretary to the Board of Health, passed the information along to the City Inspector, John Pintard, who, in turn, referred the matter to the City Council. Hardie reported that 150 bodies were interred in the vault annually and that it now contained 750 bodies. The foul miasma was such that he feared "it may be productive of terrible consequences to the neighborhood." The City Council promptly passed an ordinance forbidding all further interments in the vault. The congregation subsequently asked the City Council to provide land for a cemetery and was granted a section of Potter's Field.⁵¹

Two years later, in May of 1809, petitions were received from the Presbyterian Brick Church and the First Presbyterian Church requesting permission to extend their burial vaults under the surrounding streets. Both petitions were granted, but on June 19 the Council again forbade interment in the vault of the Negro church. The City Council could searcely have been unaware of the inconsistency of its actions with respect to the white and Negro churches. Moreover, there was persistent criticism of burials within the city proper. For example, the Board of Health had recommended prohibiting all such interments just three years earlier. Whatever the cause, on June 26, 1809, the Council resolved that in the future no vaults were to be allowed to extend under any of

the city streets. Shortly thereafter the Council rescinded all previous licenses for extending vaults under public streets except in those cases where construction had already begun.⁵²

Following this action, the issue remained quiescent for a few years, although in 1813 Dr. Isaac Ball, writing in *The Medical Repository*, bitterly condemned the use of burial vaults. Often, he said, when the vaults were opened the congregation had to retreat far back to avoid the offensive smell, and he had been told by the sexton of the Dutch Church that on descending into the vaults "candles lose their lustre, and that the air was so sour and pungent that it stung his nose like pepper-dust." The editor of the journal added a note confirming Dr. Ball's observations and expressing strong support for his views.

In 1817 the First Baptist Church sought permission to build a vault in front of their Church on Gold Street, but the Council refused. However, in 1819 when the Quakers asked to extend their vaults under Duane and Augustus Streets, the Council granted the request. This decision, however, brought several protests.⁵³

While most of the complaints had been levied against the use of vaults, the Potter's Field came under sharp criticism in 1819 and 1820. A resident of Greenwich claimed that the practice was to dig a grave large enough for ten or twelve coffins and leave it open until it was filled. This method, he wrote, might be excusable in cold weather, but it was dangerous and offensive in summer. A year later the Board of Health officially notified the City Council of the dangerous situation in the Potter's Field. The Council referred the matter to the Committee on Public Lands and Places, which recommended that at least two feet of dirt must cover all corpses and that no body be buried less than four feet from the surface of the ground. Contagious fever victims, however, were to be buried at least six feet deep.⁵⁴

The grumbling discontent against the graveyards might have continued for years had not the final yellow fever epidemic of 1822 brought matters to a head. In 1820 the health commissioners had recommended a prohibition against burials within the city, but the Council, reluctant to take issue with the churches, had paid no attention. At the end of the 1822 epidemic the Mayor addressed a message to the Council in which he took up a number of health issues. After noting that physicians in general felt that the large

number of interments within the city was "attended with injurious consequences to the health of the inhabitants," he suggested that it might be advisable, at least during part of the year, to prohibit all such interments. The Council, which during the previous August had temporarily closed Trinity Church graveyard, decided to establish a committee. A month later this body recommended an ordinance completely forbidding all burials south of Canal Street. Conscious that it was dealing with a touchy subject, the Council tabled the report. As news of the proposed ordinance spread, virtually every church in New York City protested—Presbyterian, Dutch Reformed, Methodist Episcopal, Baptist, Episcopal—all united in opposition.⁵⁵

On March 31, 1823, a special committee, impressed by "the general excitement & the numerous remonstrances against the [proposed] Law," recommended a modified interment law which would have permitted the use of family vaults. The Council, rather surprisingly, took a firm stand and permitted no exceptions in prohibiting all burials south of Canal Street on the Hudson River and Grand Street on the East River under penalty of a \$250 fine. At the same time the Council established a special committee to select a suitable site for a public burial place.⁵⁶ Once again petitions and remonstrances descended upon the City Council, and although wavering on one occasion, it stuck by its decision. In 1824 the churches took a new tack, asserting that the burial ordinance was an abrogation of the original grant made to them by the city. The Council still remained adamant. In January and early February of 1825 the various churches joined together and asked for a conference with a committee of the City Council. The Council first rejected the petition and then on February 14 referred it to the Committee on Public Lands and Places. By this date the churches had already taken the matter to court. The Mayor announced on February 28, 1825, that the Brick Presbyterian Church had brought suit, and a week or so later the Committee to which the question had been assigned reported that in view of the several lawsuits pending, it would be improper for the members to express an opinion and requested that it be discharged from further consideration.57

In May the Committee on Laws, to which the issue had been referred, recommended repealing the ordinance. By a close vote, 9

to 8, the question was deferred. After various moves and counter moves, on June 6 the interment question was again referred to the Committee on Public Lands and Places and the date June 9 was set aside by the Council for a general discussion of the issue. The June o meeting began with a long report from the Committee, which reviewed the entire history of the interment question in New York and described burial practices in other cities. The 1798 report of the Medical Society was read, but to counter it, a petition signed by 130 New York physicians favoring burials in family vaults was presented, a petition which included the names of such outstanding physicians as Drs. David Hosack, Joseph Bayley, Wright Post, and Valentine Mott. Turning to the question of private property rights, the Committee pointed to the many regulations on private property already in existence and declared that all property rights were regulated "by that great principle which gives life and stability to the social system and forms its very foundation, the public good." The medical grounds for its opposition to burial grounds within the city, the Committee said, was that while it did not believe the emanations caused vellow fever, yet it felt that they vitiated the atmosphere, thus helping to bring on the disease. The report concluded by recommending that the 1823 ordinance remain unaltered. After a prolonged discussion, the Council voted 13 to 7 to uphold the measure.58

The matter was still not settled. In August the City Council had to begin legal proceedings to force St. Thomas Protestant Episcopal and the Reformed Dutch churches to conform to the burial ordinance. Petitions and counter petitions continued to pour into the City Council and motions were introduced to repeal the law, but in every case the Council supported its original position. The churches refused to give up until the fall of 1827 when the State Supreme Court upheld the legality of the 1823 ordinance. Even then the municipal authorities continued to have difficulties enforcing the law. Fortunately, violations of the ordinance could scarcely be concealed and reluctantly the churches were forced to conform.⁵⁹

The Regulation of Food

Glancing over the laws and ordinances related to food, one gains the impression that New York officials were far more concerned with the city's commercial reputation than with what the citizens ingested. Meat, flour, fish oil, and other provisions designed for export were thoroughly inspected, and all containers, unless stamped by the inspectors of the state of origin, were examined and certified by the New York inspectors. In the days before refrigeration, repeated inspection was a necessity. For example, *The Medical Repository* reported in 1800 that the Inspector General of beef and pork had examined several thousand barrels of spoiled meat and had employed forty individuals to help in inspecting, resalting, and repacking them. The medical journal's interest lay in the fact that no fewer than thirty-eight of the workers had been afflicted with dysentery, which the editor attributed to the inhalation of fumes from the bad meat.⁶⁰

In addition to those laws designed to check on exported provisions, a second group of regulations arose from the belief that the odor or miasma arising from spoiled food was a factor in the recurrent epidemics. Typical of these was an order by the City Council during the yellow fever outbreak of 1798 directing that the law against "putrid or unwholesome" meats be strictly enforced. Requiring owners to get rid of putrid meat during the epidemic, however, did nothing to remove the allegedly dangerous substances. Health Officer Bayley reported that the offending merchants had simply opened the barrels in the streets and thrown the bad meat into the gutters. This in itself constituted a breach of the sanitary laws, but the overlapping of city agencies always made it difficult to determine where the responsibility lay for enforcing any particular law."

A committee working on this problem recommended in January of 1799 that the spoiled provisions be thrown into the river "at a suitable distance from shore." As a further precautionary measure, the committee urged that "no fresh meats or dead fish of any kind... be offered for sale, nor permitted to remain in the public markets after ten o'clock in the morning." As with the other sanitary problems, the laws were generally adequate, and the real determinant was the degree of enforcement. On the whole, this seems to have improved in the succeeding years, since the number of complaints fell sharply. 62

The one food item which continued to be regulated in the direct interest of the citizens was bread, but even here the rising

spirit of laissez faire was being felt. A group of wealthy citizens organized the New York Bread Company in 1801–1802 after leading a fight to repeal the bread assize. Although their success was only temporary, the changing attitude toward price and quality controls was indicated by an editorial in an 1806 medical journal. In former years, its editor wrote, the Common Council had fixed assizes on a number of provisions but now its activities were restricted largely to bread. And there was much question, he concluded, whether "this interference of public authority is useful and proper." Nonetheless, despite the growing opposition to this type of control, the Council continued to appoint bread inspectors. An ordinance on October 22, 1804, provided for the selection of a "discreet, industrious, and intelligent person" as Inspector General of bread with the right to appoint as many deputies as he felt necessary. 63

A year later, 1805, a grand jury accused the New York bakers of using "bad and unwholcsome flour." The bakers, in turn, blamed the flour inspectors, and the Council, at the request of the bakers, petitioned the Legislature for authority to appoint three flour inspectors, each of whom was to be a miller or baker. As the city grew, the number of bread inspectors was increased commensurately. An 1810 ordinance, divided the city into three districts, with a bread inspector in each one. The inspectors, whose salary was \$400 per year, were to inspect and weigh the bread in their respective districts. This system worked well in general, although occasional complaints were registered. In June of 1818 the Council investigated charges that "unwholesome loaf bread" was being sold, and in the fall the Chamber of Commerce appointed a committee to inquire into the "depreciated quality" of wheat and flour. One of the newspapers declared that the "bad quality of the New-York flour seems to be generally admitted," although it was not sure where the blame rested. One possibility was that the law forbidding the export of substandard flour led to shipping the good abroad and leaving the poorer flour for home consumption. Another source of difficulty arose from the political appointment of inspectors, who were described as "being unfaithful, or negligent, or incompetent." This harsh appraisal of the bread inspectors was confirmed by a series of letters from newspaper readers, most of which accused the officials of graft. One writer declared that firmness and fidelity in the character of the inspectors was the quality most needed.⁶⁴

The subject remained a public issue until 1822, when the State Legislature, at the behest of the City Council, passed an act requiring that all flour and meal shipped in from outside the state and offered for sale within the city must meet the same standards as flour intended for export. For the first time governing officials conceded that the damage from feeding bad flour to their constituents was at least as bad as the economic loss resulting from shipping it abroad.⁶⁵

For some reason the sale of oysters during the summer months was perennially a sore point, and the City Council repeatedly passed ordinances forbidding anyone to bring oysters into the city between June 1 and September 30. Since the fine was nominal (the amount was usually two dollars), the law was frequently broken, and periodically the newspapers would demand its stricter enforcement.⁶⁶

Fish and meat could only be sold by licensed butchers and fishermen, and thus the authorities were able to supervise the sale of these provisions fairly closely. The chief complaints against these tradesmen related to the condition of their stalls or shops rather than the quality of the goods for sale. Considering the size of New York City in 1825, there is surprisingly little evidence of chicanery in the sale of these products.

Good quality milk and dairy products were still available, and, other than a brief flurry of activity in 1814–1815 over the need for an inspector of butter and lard, no supervision was requested nor appears to have been necessary. The age of chemical additives had not yet arrived, but it was foreshadowed during these years. In 1799 the City Council publicly cautioned the citizens about buying gin, since the liquor dealers had been clarifying it with a lead preparation which, the Council warned, could cause the painter's colic or dry palsy, contemporary names for lead poisoning. The Council added that it was taking measures "to suppress the evil." Twenty-two years later the city officials issued an order prohibiting any person from using "allum[sic] or other unwholesome ingredient" in the making of flour under penalty of a ten dollar fine.⁶⁷

These latter instances were exceptions, however, and despite

the occasional criticism, the quality of the food sold in New York was generally good. In 1818, when reports of large-scale adulteration of foodstuffs in London were carried in the American newspapers, the Evening Post, always an outspoken journal, expressed satisfaction that such things would not occur in America, adding that "the petty frauds of a few of our countrymen" are confined to the manufacture of "wood nutmegs and bass-wood pumpkinseeds," the effects of which were harmless. A European observer in this same year declared that in New York the meat, fish, and greens were of good quality, and that the bread, which was made of wheat, was very tasty. While short weight and false measures were not too uncommon and some of the food inspectors were poorly qualified or corrupt, on the whole the food supply of New York was probably much better than that to be found in most European cities.⁶⁸

The public markets during these years continued to serve their dual purpose of providing a convenience for buyers and sellers and enabling the municipal officials to keep a close check upon the quality and price of foodstuffs. In an attempt to prevent forestalling, or buying up all available quantities for resale at a higher price, the city had long forbidden street hucksters to sell any articles usually sold in the markets. The markets were under the supervision of clerks who collected fees and enforced the market regulations. Only licensed butchers were permitted to dress and sell meat, and fish could be sold only by fishermen. To prevent forcstalling, no one was to purchase any provisions before noon for resale within the city. The sale of "any unwholesome or stale articles or provision, or any blown, plated, raised or stuffed meat, or measly pork" was specifically forbidden under penalty of ten dollars. The rest of the regulations dealt with weights and measures, market fees, sanitation, and the general policing of the markets.69

The City Council paid particular attention to the sanitary condition of the markets. In 1803 it ordered that the ceilings be white-washed and that water from the Manhattan Company be brought into the center of each market for cleaning purposes. Occasionally special orders were given to the butchers, fishmongers, and other tradesmen to clean the areas in the vicinity of their stalls. In 1821 the City Council requested authority from the Legislature to confiscate all provisions in the markets found to be "short in the

weight or measure or Stale or unwholesome." As the city expanded and land became more scarce, the State Legislature in 1822 gave permission to build public markets over the waters of the East and North Rivers, provided they did not interfere with the flow of the water or extend more than 100 feet out into the rivers.⁷⁰

Building Regulations

The main purpose of building regulations in early New York was to reduce the danger from fires, but esthetic and health considerations, too, entered into the picture. In February of 1795 a City Council committee recommended that the erection of frame or wooden buildings exceeding 28 feet in height be prohibited and that no more than 1,000 pounds of sulphur or 2,000 pounds of hemp or flax be stored in any one spot. The following April the Legislature enacted a more stringent law than had been requested. It declared that henceforth all new buildings which would be higher than 25 feet must be constructed of brick or stone and that the roofs must be of slate or tile.⁷¹ The prevention of fire, a real threat in a day characterized by open fires, wooden buildings, and no water systems, was assumed to come within the purview of the health boards, once these agencies were created. Thus, when Charles W. Peale offered to sell the City Council his patent for the construction of chimneys, the matter was turned over to the health committee. Acting upon the committee's recommendation, the Council subsequently paid Peale \$500 for his patent right. In 1800, as mentioned in a previous chapter, the City Council initiated a small-scale slum clearance program when it bought up some buildings which were dilapidated and crowded together. According to the original motion in the Council, the city was to raze the existing structures, lay out larger lots, and sell them "to Persons who would erect proper and wholesome Buildings thereon, reserving sufficient Yards [so that] the Health & Comfort of the City would be greatly promoted."72

When the City Inspector's Office was created in 1804, it was given responsibility for the enforcement of fire and building regulations. Under the direction of John Pintard, one of the best of the early inspectors, law enforcement was effective, but following his dismissal, the City Council records make little mention of the

building construction laws. A state law in 1818 required that foundations for new buildings extend at least six feet below the surface of the ground, but a meaningless penalty was provided.⁷³

A second type of regulation related to the use of buildings, and clearly falls within the domain of public health. The ordinance for the regulation of taverns, victualing houses, and boarding-houses is the best illustration of this type of law. The original law required the owners of such places to report the names of all transient guests and was designed as a check upon the movements of potential carriers of contagious diseases. By the nineteenth century the law was broadened by provisions to prevent overcrowding. An 1805 ordinance required owners to report to the City Inspector the number of apartments and rooms available for tenants or lodgers, and to obtain a license specifying the maximum number of boarders or tenants per building. This number was to be determined by the City Inspector in conjunction with the alderman or assistant alderman of each respective ward. The City Inspector was required to inspect each dwelling place weekly during the summer and once a month for the rest of the year to see that all regulations were observed. A \$25 fine was to be imposed for any violation.74

Four years later Health Officer Rodgers wrote to the City Council, asking that the boarding-house law be enforced. What action the Council took is not clear, but a year later, on July 9, 1810, it passed a more stringent law. It restated the provisions of the 1805 ordinance, but provided that the assistants to the Board of Health should work with the City Inspector in determining the number of residents per building and in checking for violations of the law. The effectiveness of the measure is difficult to say, since the records make no further mention of this topic for many years. If the boarding-house law followed the customary pattern, it can be assumed that the regulations were applied with some zeal for a year or two, routinely thereafter, and then gradually fell into abeyance.

Notes to Chapter 9

- 1. M.C.C., 1784-1831, I, 337, 724.
- 2. Ibid., III, 137, 219, 253.
- 3. Ibid., 525, 718, V, 162, 179, 80, 185, 211, 238, 275, 316, 509, VIII, 12.
- 4. The Medical Repository, VI (1803), 38-42; Letters Concerning the Gen-

- eral Health . . . as they lately appeared in the New-York Gazette. By a Householder (New York, 1805).
- Edward Miller, Report on the Malignant Disease, which prevailed in the City of New York, in the Autumn of 1805: Addressed to the Governor of the State of New-York (n.p., n.d.), 6-8, 35.
- 6. M.C.C., 1784-1831, III, 719, VII, 168-69, 178, VIII, 25-26.
- Stokes, Iconography, I, 397; Evening Post, October 7, 1811; N.Y. State Laws, 35th sess., chap. 212, June 19, 1812, VI, 563-64.
- 8. Evening Post, June 26, 1816.
- F. C. Genèt, Communication on Public Health and Public Improvement (New York, 1818); M.C.C., 1784-1831, XII, 531, 812.
- 10. Evening Post, September 24, 1822.
- 11. M.C.C., 1784-1831, XI, 199, 205.
- 12. Ibid., X, 570, 602.
- 13. Daily Advertiser, June 7, 1825.
- Wegmann, Water-Supply, 3; M.C.C., 1784-1831, II, 135, 137, 212, 320;
 American Minerva, February 21, 1796.
- 15. Joseph Browne, A Memoir on Supplying the City with Pure and Wholesome Water (New York, 1799).
- 16. M.C.C., 1784-1831, II, 347, 437, 568; Stokes, Iconography, V, 1338.
- 17. Commercial Advertiser, August 28, 1798; Commercial Advocate, September 5, 1798.
- 18. M.C.C., 1784-1831, II, 486 87.
- 19. Ibid., 489-90.
- 20. For a detailed account of the events leading up to the establishment of the Manhattan Company, see Beatrice G. Reubens, "Burr, Hamilton and the Manhattan Company," *Political Science Quarterly*, LXXII (1957), 578-607, and LXXIII (1958), 100-25. Neither the Federalists nor the Republicans emerge in a good light in this account, both sharing blame for the abysmal failure to secure a good water supply for the city.
- 21. M.C.C., 1784-1831, II, 514-15, 517-21.
- 22. Ibid., 520.
- Stokes, Iconography, V. 1364-66; Commercial Advocate, April 19, 1799;
 Gazette and General Advertiser, May 1, 1799.
- 24. Stokes, Iconography, I, 393, V, 1367-68; Wegmann, Water-Supply, 9.
- 25. The Medical Repository, IV (1801), 69.
- 26. M.C.C., 1784-1831, II, 611, 644, III, 6, 619; Evening Post, July 26, 1803.
- 27. M.C.C., 1784-1831, III, 584, 594 95, 597, 606, IV, 715-16, 732-33.
- 28. Evening Post, January 26, 1808.
- M.C.C., 1784-1831, VII, 119, X, 76, 532, 577, XII, 92; Evening Post, April 17, 1813; Baron Klinkowström's America, 68-69.
- 30. M.C.C., 1784-1831, XII, 309-11; Daily Advertiser, April 6, 10, June 13, 1822.
- 31. Charles King, A Memoir of the Construction, Cost, and Capacity of the Croton Aqueduct, Compiled from Official Documents (New York, 1843), 101-02; M.C.C., 1784-1831, XII, 766-81, XIII, 168.

- 32. M.C.C., 1784-1831, XIII, 487, 658, XIV, 288, 326, 351; King, Memoir of the Croton Aqueduct, 103; Daily Advertiser, December 14, 1825.
- 33. Stokes, Iconography, V, 1636; Daily Advertiser, May 6, 7, 1825.
- 34. Wegmann, Water-Supply, 12-13.
- 35. M.C.C., 1784 1831, III, 352; Evening Post, August 3, 1821.
- 36. M.C.C., 1784-1831, XIII, 382-83, XIV, 118-19.
- 37. Ibid., V, 233; Evening Post, July 8, 1809.
- 38. Evening Post, June 28 30, 1810.
- 39. M.C.C., 1784-1831, VI, 178, VII, 540, IX, 776, X, 18, 178, 252-53.
- 40. Ibid., IX, 24.
- 41. Ibid., XI, 771, XII, 725-29, XIII, 694, 703-04, XIV, 710.
- Evening Post, August 7, 1802; The Medical Repository, V (1802), 73;
 M.C.C., 1784-1831, VI, 596-97, 625.
- 43. Evening Post, June 25, 28, August 14, 1814, September 2, 1818, June 29, July 13, 1819.
- 44. M.C.C., 1784-1831, XII, 447, 460-61.
- 45. Evening Post, September 27, 1816, May 26, 27, December 17, 1817, March 31, 1820.
- 46. Ibid., February 21, March 17, 1818.
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- 52. Ibid., V, 532, 544, 558, 586, 595, 611-12.
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 IX, 88, X, 327, 363, 574, XI, 38.
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- 58. Ibid., XIV. 523, 576 634; Report of the Committee . . . on Interment (1825), 73-75.
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- 60. The Medical Repository, III (1800), 309.
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- 62. Ibid., 504; The Medical Repository, II (1799), 307.
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- 64. M.C.C., 1784-1831, IV, 14-15, 139, VI, 11-15; Evening Post, October 14, 21, 27, 1818.

Control of the Physical Environment

- 65. M.C.C., 1784-1831, XII, 227, 247-48; N.Y. State Laws, 45th sess., chap. 117, March 29, 1822, VI, 117-18.
- 66. M.C.C., 1784-1831, II, 464, IV, 48; Evening Post, August 12, 1818, July 31, 1821.
- 67. M.C.C., 1784-1831, VII, 751, VIII, 159, 167; Commercial Advertiser, August 27, 1799; Evening Post, December 31, 1821.
- 68. Evening Post, August 7, 1818; Baron Klinkowström's America, 68.
- For the text of the public market law, see the Evening Post, July 20, 1814.
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- 71. M.C.C., 1784-1831, II, 128; Stokes, Iconography, V, 1317, 1330.
- 72. M.C.C., 1784-1831, II, 483, 485, 609.
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10

Medicine and Hospitals

The State of Medicine

The practice of medicine changed relatively little in the thirty years prior to 1825, but notable strides were made toward the professionalization of its practitioners. In the city and the state at large, medical societies began blossoming and these organizations gained some control over the licensing of physicians and surgeons. The drive to raise professional standards was reflected in the fight to improve medical education and in the ever-increasing number of hospitals. Moreover, through their societies the doctors were able to influence local and state officials and play a greater role in developing public health policies.

The Medical Society of the State of New York, whose origin dated back to an association founded in 1749, managed to survive the Revolutionary War years, but only as a small struggling group meeting quite irregularly. In 1794 the Society was reorganized by an able and energetic group of young physicians. The outbreaks of yellow fever in these years undoubtedly stimulated this reorganization, but the growing number of conscientious and well-trained medical men in New York made it almost inevitable that a more effective professional association should come into existence. The roll of membership at the first meeting included a good share of the best physicians in New York City—Drs. John Charlton, Samuel Bard, Malachi Treat, Richard Bayley, and John R. B. Rodgers.¹

With an active medical society operating in the city, it was only natural that the Governor and municipal officials should appeal to it for medical advice during the long series of yellow fever epidemics. The work of the Medical Society in these years has been discussed in the chapter on yellow fever. Suffice it to say, although the Society sought to avoid taking an official position on the importation question, it generally emphasized domestic causes. Throughout the entire period it repeatedly issued warnings and made recommendations for improving the sanitary condition of the city. Among the other responsibilities it assumed was that of inspecting drugs. Apothecaries who cooperated were permitted to advertise that their drugs had been certified by the Society, but the Medical Society was careful about the use of its name and did not hesitate to act against unscrupulous druggists.²

In the days before the regulation of drugs, adulteration was often practiced by everyone concerned, from producer to retailer, with the result that doctors were often in a quandary over how much of a particular medicine to prescribe. The excessive doses administered by eighteenth and nineteenth-century physicians may well have been the result of their experience with drugs whose strength had been drastically reduced by profit-conscious drug companies and pharmacists. The tragedy, of course, was that occasionally a patient was given a massive dose of a highly potent medication which an honest company was producing and selling at full strength. Not surprisingly, many doctors preferred to compound their own prescriptions, and all of them were conscious of the need for honest and capable pharmacists.

A more important result of the reorganization of the Medical Society was that it enabled doctors to bring collective pressure to bear on strengthening the medical licensure laws. The first law, a provincial act passed in 1760, had neither appreciably reduced the number of quacks nor raised standards. Following the Revolution the law was reenacted, but its provisions were applicable only to the City and County of New York. Five years later, in 1797, the provisions of this law were extended throughout the state. Since the penalty for violation was slight and the law laxly enforced, its significance lies chiefly in showing a recognition of the need for regulation. The New York Medical Society made several attempts in the following years to obtain more effective legislation, but the chief credit for revising the licensure law goes to a group of energetic physicians in Saratoga, Washington, and Montgomery Counties, who were determined to stop the inroads of quacks. These doctors, after some preliminary maneuvering, sent a committee of three—John Stearns of Saratoga County, Asa Fitch of Washington, and Alexander Sheldon of Montgomery—with a memorial to the State Legislature. The Legislature and public were suspicious of medical monopolies, and the prospects for the proposed medical bill were far from bright. Its fortunes, however, took a sharp turn for the better when Dr. Sheldon, a state representative, was elected Speaker of the House.³

Although the original memorial had called for incorporating medical societies in only three counties, the law as passed on April 4, 1806 provided for the establishment of medical societies in each county in New York and declared that "no person shall commence the practice of physic or surgery within any of the counties of this State until he shall have passed an examination and received a diploma from one of the medical societies. . . . " Anyone failing an examination given by the county organization could appeal to the state medical society which was given authority to overrule the local group.4 This law gave a great impetus to the establishment of county societies, and within three months about twenty of them were in operation. The only immediate effect in New York City was to cause the existing society to remove the word "State" from its name and substitute "County." At a meeting shortly after passage of the Act, the Society expressed doubts about certain provisions but conceded that the net effect would be beneficial.5

Two objections which had been raised to the 1806 measure were corrected by an amendment the following year. The original act placed no penalty for practicing without a license save that the offending practitioner could not legally collect his fee. The act of 1807 assessed a \$5.00 fine for each month that an unlicensed practitioner engaged in medicine. Three loopholes, however, virtually negated this provision. The penalty was not to apply to apothecaries, nor to private individuals who administered medicine but did not profess to be doctors. Since druggists were free to prescribe, many individuals who were not qualified for medical licenses simply opened pharmacies, while the clause permitting nonprofessionals to administer medicine opened the door to the growth of a variety of other unorthodox practitioners. To make matters worse, a final provision exempted any person using herbs or roots, thus giving legal sanction to a host of herbalists and irregulars.6

Although the law proved no real check upon quacks, it at least

offered the public a chance to decide whether they wanted a licensed physician or an unlicensed empiric. Several minor changes were made in the following years. An amendment in 1813 sought to give legal status to all county medical societies. This had been the intent of the State Legislature in 1806, but the wording of the original law had been vague. One last change was made prior to 1825. An act in 1818 required that students serve an apprenticeship of four years, or three years' apprenticeship plus one course of medical lectures, before taking the medical examination given by the local medical society. However, as had been done formerly, one year's credit was given for previous classical studies or any medical education obtained outside the state.⁷

Two other medical societies were formed during the early years of the nineteenth century, but neither seems to have gained firm footing. Shortly after the turn of the century the Physical Society came into existence. It maintained amicable relations with the New York Society, but other than this little is known about it. In 1815 the newspapers announced a meeting of the Medico-Chirurgical Society of the University of the State of New York, but no further reference has been found to this body, which appears to have been as ephemeral as the Physical Society.⁸

The growth of medical societies, unfortunately, was not paralleled by a comparable development in the area of medical education. The revival of the Columbia Faculty of Physic under Dr. Samuel Bard in 1792 was far from successful, and Dr. Nicholas Romayne's connection with Queen's College (later, Rutgers at New Brunswick, New Jersey) proved even more fleeting. The medical faculty at Columbia consisted of Dr. Bard and five professors, and the annual enrolment for the first twenty years averaged only about 43 students. The school might well have remained in the doldrums had not the indefatigable Dr. Romavne been elected president of the New York County Medical Society in 1806. The Medical Society, despairing of reforming Columbia, asked the legislature to be incorporated "as a College of Physicians and Surgeons. . . ." When opposition quickly developed from doctors outside the Society, Romayne by-passed the Legislature by successfully appealing to the chancellor and regents of the University of New York. A charter was granted to the Society in the spring of 1807, and Dr. Romayne quickly organized his faculty, Fiftythree students were enrolled when the school opened in November. Romayne, a forceful and egotistical individual, was scarcely the man to keep peace among a group of physicians and surgeons, a profession notorious in those days for its contentiousness and bitter in-fighting.⁹

By 1810 several faculty members had resigned and the school was in dire straits. An investigating committee appointed by the Regents recommended in 1811 that the College of Physicians and Surgeons be combined with the Columbia Medical School. Columbia, revived and strengthened by the merger, now came under the presidency of Dr. Samuel Bard and flourished during the ten years of his administration. Dissension again broke out in the early 1820s and lasted until the appointment in 1826 of Dr. John Watts, another able administrator. In his capable hands, the School began the long climb to maturity. Meanwhile, Dr. Romayne, who had broken with his colleagues, led a dissident faction of the faculty out of Columbia and once again renewed his affiliation with Queen's College. The association was a tenuous one, and with Romayne's death in 1817 this medical school soon disappeared.¹⁰

Another indication of the growing professionalization of medicine in New York City was the appearance of *The Medical Repository* in 1797 under the editorship of Drs. Samuel L. Mitchell and Edward Miller. The editors of this first American medical journal generally supported the theory that yellow fever was of domestic origin, and by so doing irritated Drs. David Hosack and John W. Francis to the point that they founded a second medical publication, the short-lived *American Medical and Philosophical Register*, 1810–1814. Reflecting the nationalistic spirit of the period, *The Medical Repository* was a strong advocate of American medical education and urged Americans to study at home. When Dr. Valentine Seaman advertised that he was offering a course of lectures in midwifery at the lying-in ward of the Almshouse, the journal warmly commended him and later gave its support to the promotion of a lying-in hospital.

In later years the County Medical Society also became concerned over the quality of care given parturient women. A committee which looked into the situation in 1823 reported that the number of still-births was larger than the state of obstetrical knowledge warranted. The following year the Society established

a system of "Out-Door Lying-in Charity." The city was divided into ten districts and two attending and two consulting accoucheurs were appointed for each one. All expectant mothers who the physicians knew were unable to pay or who were recommended by the authorities were to be provided with free medical care. How long the system remained in effect is not clear, but this would appear to be one of the first attempts in the United States to establish a maternal and child health program.¹²

A chief preoccupation of the medical profession during much of the nineteenth century was that of determining the cause and cure of the recurrent epidemic diseases, and for the first quarter of the century vellow fever absorbed most of the attention of New York physicians. When the fever reappeared in the early 1790s, the profession, with some reservations, tended to subscribe to the contagionist viewpoint, that is, the disease was a specific entity imported from an outside source. As the failure of quarantine measures became evident, anti-contagionist ideas soon became widely prevalent among physicians. As shown earlier, most doctors in New York City were convinced by 1800 that the disease was either propagated in, or compounded by, unsanitary conditions. A few, such as David Hosack, continued to argue that yellow fever was a separate and distinct form of fever brought into the city by infected goods or individuals. Even this group, however, conceded that better sanitation might reduce the impact of the disease and that it would certainly improve the general health. The public never ceased to look upon yellow fever as a contagious disease, and state and local officials, under pressure from all sides to do something, generally played safe by adopting both quarantine and sanitary measures. Significantly, every public committee established to examine the causes of yellow fever usually began its report by carefully stating that it had no intention of passing judgment on the importation issue so long as the counsels of its medical advisers remained divided.

The final yellow fever epidemic of 1822 provides a good commentary upon the contradictions in the prevailing medical concepts and the complete bafflement of public officials. When the New York Board of Health was accused of concealing yellow fever cases in July, President Stephen Allen declared that the Board of Health was not composed of medical men and did not pretend

to be able to diagnose diseases. "How should they undertake to decide," he asked, "when medical men differ so widely on this subject?" All that the Board could do, he said, was to report all cases and to give the various opinions of the doctors. Subsequently a special committee appointed by the Board to prevent the disease from spreading declared that every day it received communications on the nature and cause of yellow fever: "One contended that it was imported; another that it originated here; a third that it was a gas, that floated in the air; a fourth that the poison of Yellow Fever emanated from the earth; and some urged what may be deemed a fanciful theory, that it is animalcules." 18

Dr. Peter Townsend, who declared that yellow fever was definitely a contagious disease, defined contagion as a specific poison or virus emitted from a diseased body. This poison, he said, possesses the power to reproduce disease in another individual either by contact or by passing through the air. Yellow fever, he continued, was not native to temperate climates, and could be introduced only when the temperature remained at 80 degrees or higher. Furthermore, the contagious matter must be concentrated in a crowded neighborhood, since "human effluvia" was its most powerful conductor. After giving what was in reality an excellent account of the characteristics of yellow fever, he concluded that quarantine was the only means of prevention, and that depopulation was the only way to stop it once it had gained a foothold.¹⁴

Dr. Joseph Bayley, who as Health Officer had had ample opportunity to observe yellow fever, also agreed that yellow fever was a specific disease entity, that it was imported, and that it was communicated by what he termed "an impure atmosphere." While more physicians were subscribing to the contagionist thesis, by the 1820s the profession was no closer to agreement than it had been for the previous one hundred years. In 1824 the president of the New York County Medical Society, in an address entitled "Observations on Endemic Fever," emphasized that yellow fever was essentially of domestic origin. He attributed its absence during the Revolutionary years to the cleanliness and salubrity of the city and blamed the subsequent yellow fever attacks upon the failure of the citizens to keep their city clean. With the doctors in complete disagreement, it was small wonder that public officials played safe and sought to prevent the importation of disease and at the

same time to eliminate those conditions which might generate or prove favorable to its spread.

One of the factors considered essential to the generation or promotion of epidemic disorders was what was termed a "vitiated atmosphere." The creation of vitiated or impure air could arise from many causes-emanations from diseased bodies, odors from humans crowded together under unsanitary conditions, miasmas from putrefying substances, and exhalations from swamps and stagnant pools. Since the chief fevers (malaria, yellow fever, and so forth) were associated with warm weather, it was believed that a combination of high temperature and humidity readings in conjunction with any or all of these other conditions provided the ideal setting for an epidemic outbreak. Thus throughout the entire colonial period, in Europe and North America, many studies had been made in an effort to find a correlation between meteorological phenomena and epidemics. In its attempts to leave nothing undone, in 1804 the City Council authorized the Resident Physician of the Almshouse to purchase meteorological instruments and ordered him to record "the state of the atmosphere" three times daily. For this extra duty, he was to receive an additional dollar per week.17

The public attitude toward the medical profession continued as ambivalent as ever. Individuals might despair of the bitter public quarrels over professional matters or complain about supposed cases of malpractice, yet in times of sickness or injury they were grateful for the services of physicians. Ironically, the move to improve medical education by requiring students to dissect human cadavers only brought public opprobrium upon the profession. In New York City, as elsewhere in America, the urban population was not large enough to supply the dissection tables with the bodies of homeless, anonymous individuals. Religious and emotional considerations made it difficult to find an adequate number of subjects, and medical students often resorted to highly questionable tactics. In England grave-robbing became almost a profession. In the United States it was an amateur business conducted largely by venturesome or desperate medical students.

A New York law in 1808 included a clause which stated that the bodies of convicts who died in the state prison could be used for dissection purposes. This law was of little use to New York City doctors and students, who apparently procured most of their subjects from the Potter's Field. At least, in January of 1809 one John McKenzie was dismissed as keeper of the Potter's Field for permitting dead bodies to be disinterred and carried away. Graverobbing continued to trouble relations between the public and the medical profession, and in 1819 a state law made it a felony to disinter any body from a cemetery or burial place and provided a five-year prison term for the offense. Even this proved no detertent, for in June of 1823 a Common Council committee recommended that a man of good character be appointed as keeper of the City Cemetery "so that all fears and apprehensions on the part of the surviving friends may be removed...."

The medical profession was attacked upon other scores, too. The newspapers were highly critical of the doctors for their failure to report cases of contagious disease to the health officials. The physicians, however, were not entirely to blame. Part of the difficulty lay in the matter of diagnosis. With neither adequate instruments nor laboratory tests to confirm their suspicions, physicians often remained in considerable doubt as to the nature of the patient's ailment. Since reporting a fever case to the authorities might subject his patient to a rough ride to some distant pesthouse, understandably, physicians were reluctant to inform health officials even when they were reasonably sure of the diagnosis.

The notorious divisions within the ranks of the medical profession was another factor which undermined public confidence. In the course of a long editorial on the question of the contagiousness of yellow fever, one editor declared that the difference between philosophers and doctors is "that the conceits and absurdities of philosophers, are generally harmless; whereas those of the physicians may draw along with them the most serious and fatal calamities." Possibly the last word on this subject was written by a physician, Dr. Peter S. Townsend, in his account of the New York vellow fever epidemic of 1822. After discussing the causes and means for preventing the disease, he concluded by asserting that he was firmly convinced that the Board of Health should be in the hands of distinguished laymen, "Were it exclusively made up of medical gentlemen," he continued, "there is too much reason to fear that their different opinions might lead, as too often happens, to interminable disputes, and to most disastrous consequences." Each health board should have some physicians as advisers, but the decisions, he declared, should rest in the hands of intelligent laymen.²⁰

For all the difficulties and disputes, informed laymen recognized that while the ferment within the medical profession arose in part from the almost insurmountable problems it faced, it was also a tribute to the wide-ranging intellectual curiosity of the better physicians. John Pintard, who as a municipal official and a prominent businessman had ample opportunity to know many doctors, spoke highly of them in a letter to his daughter. In describing the Lyceum of Natural History, an organization in which he himself was active, he declared that its younger members were doing wonders, "chiefly young physicians that intelligent & most excursive of all the professional branches." Moreover, the nature of the physicians' work brought them in contact with a wide range of social classes, and they were often the first to become aware of social evils. Observant doctors recognized that healthful conditions among the impoverished could come about only by changing their environment, and thus they became early advocates of social reform.21

The Development of Hospitals

Hospitals at the beginning of the nineteenth century bore little resemblance to the gleaming glass and concrete structures of today, and their functional differences were even greater than that represented by the exterior changes. Decent, respectable citizens expected their physicians to treat them at home, where, surrounded by loving families, they could expect to get the tender care which was their due. If medicine could not save them, then they wished to die in familiar surroundings, attended by relatives and friends. In part, it was this attitude that led families to object to having their sick bundled off to a distant pesthouse or isolation hospital. These institutions, as mentioned earlier, were designed primarily for sick strangers, lodged in boarding-houses or inns, or for the poor, crowded seven or eight in a room and often sleeping on piles of rags on the floor. Nearly all of the early hospitals, then, were designed as charitable institutions. While they varied in quality, some clean and well-run, others crowded and dirty, they all carried the stigma of charity.

Without modern laboratories and equipment for diagnosis and treatment, hospitals could offer little, if anything, more than could be obtained at home—care and nursing. The rise of cities and the growth of a large impoverished class led hospitals to become crowded and the quality of care to deteriorate. The poor, who rarely saw a doctor until their illness was well advanced, were taken to hospitals only when their condition was serious. Thus hospitals came to be viewed as a place of last resort—where one went to die. Before the advent of bacteriology, the formation of pus following injuries or surgery was not considered a sign of infection but rather a part of the normal healing process—the so-called "laudable pus." Thus the smell of suppurating wounds and ulcers was added to the other vile odors which permeated the hospital atmosphere.

In many institutions the poor were crowded two and three in a bed and nursing care was minimal. Bedclothes were seldom changed, and the attendants were often of the lowest class. Prostitutes and petty criminals who could no longer practice their trades could often eke out a living in hospitals. Hospital nurses, other than members of religious orders, were considered the dregs of society, and it was for this reason that Florence Nightingale and her disciples insisted on rigid, puritanical codes in establishing the early nursing schools. If nursing was to appeal to a higher class of women, it must first be made respectable.

In the United States higher living standards and better wages mitigated conditions somewhat, but even here the public attitude was still one of suspicion. Aside from the association of hospitals with charity, the thought of lying in a crowded foul-smelling hospital ward, listening to the groans and cries of the sick and dying, was enough to appall the well, let alone the sick. Gradually a few proprietary hospitals developed which could offer private rooms and good care. Progress was slow, however, and the flowering of hospitals did not come until radical innovations in medicine and surgery revolutionized the practices in the latter part of the nineteenth century.

In New York City, the period from 1792 to 1825 saw the founding of both charity and private pay hospitals. The long and complicated birth of the New York Hospital has already been recounted in a previous chapter. The institution opened its doors in

1791 to begin a long and distinguished career. In 1792 the Legislature provided for an annual grant of £2,000 for five years. As the number of patients grew, the governors of the Hospital in 1794 appealed for public contributions. This induced the Legislature the following spring to raise its annual grant to £4,000 and a year later, in 1796, to increase it to £5,000. The preamble to the latter act stated that the additional appropriation was "to enable the said society, to discharge their debts and make necessary repairs to the said hospital." $\frac{1}{2}$

In addition to dealing with an increasing number of patients, the Hospital soon found itself assuming new duties. In 1797, if not earlier, the first mental patient was admitted, and in 1801 a lying-in ward was established when the New York Asylum for Lying-In Women, founded by Dr. Hosack in 1798, ran into financial difficulties and was compelled to close its doors. The assets of Dr. Hosack's Society were turned over to the New York Hospital with the understanding that the latter would provide a lying-in ward. This same year, 1801, the State Legislature voted an annual grant of \$12,500, a policy which it continued for many years.²³

By 1802 the New York Hospital had become a substantial institution. The report for this year showed 1,103 admissions. Of these, 654 were released as cured, 88 were relieved, and 106 died. The death rate of slightly less than to per cent was quite respectable, considering that hospitals in this period were looked upon as a place of last resort. Neither the attendants nor the patients could have had too easy a time, since 27 patients "eloped" and another 38 were discharged for disorderly conduct. As was to be expected of a port city, over half of the patients were foreigners, with Ireland supplying 256, or better than 23 per cent. The report for 1804, which showed 1,168 admissions and a total expenditure of \$15,-065.35, mentioned that a lying-in ward was available for indigent females and that separate apartments had been set aside for maniaes. The growing number of mental patients had necessitated the addition of a third floor for their reception. In short order, this floor became overcrowded, and in 1806 the Legislature appropriated funds to build a "Lunatic Asylum" adjacent to the New York Hospital.24

The next few years saw the hospital population steadily increase. Although only 1,067 were admitted in 1800, the figure



The New York Hospital circa 1807. Courtesy of the New-York Historical Society, New York City.

jumped to 1,492 in 1812. Ten years later, in 1822, a total of 1,720 patients were treated, and in 1825 the number reached 1,837. The case fatality rate appears to have remained in the vicinity of 10 per cent. For example, there were 156 deaths among the 1,492 admissions in 1812, and 177 deaths among the 1,837 patients in 1825. With a hospital of this size, the Medical School should have been able to provide ample clinical experience for its students.²⁵

New York Dispensary

The New York Dispensary, which opened in January of 1791 in a house on the corner of Beekman and Nassau Streets, continued to provide a relatively high order of out-patient care. Its services seem to have been supplemented in 1792 by another agency, the New York Public Dispensary. According to the City Directory, the New York Dispensary had thirteen physicians and one apothecary on its staff, while the New York Public Dispensary had two physicians, two surgeons, and one druggist. No further mention was made of the latter institution in the succeeding directories, and it may have been a temporary agency established at the Almshouse during the fever season. A new act of incorporation reorganized the New York Dispensary in 1795 and the Reverend John Rodgers assumed the presidency. Appealing for public assistance in 1797, the president noted that during the first five years of its existence the Dispensary had treated more than 2,000 patients.²⁶

In 1802 the Dispensary admitted 564 patients. Three years later its activities were greatly increased when it absorbed the New York Institution for the Inoculation of the Kine-Pock. This latter organization was founded shortly after vaccination was introduced into New York. Smallpox inoculation, that is, inserting the smallpox virus under the skin, was well known to New Yorkers, and its practice greatly facilitated the introduction of vaccination, that is, inserting cowpox rather than smallpox virus under the skin. Dr. Valentine Seaman, who had lost a child to the older method of inoculation, was the leading spirit in bringing vaccination to the city, but he had strong support from the other doctors. The Medical Repository, reporting on "Vaccine Pox" in 1801, said that so far its practice had not been successful in New York, but attributed its failure to a lack of genuine vaccine matter. The editor

expressed himself as firmly in support of vaccination and urged that all efforts be made to obtain a supply of the proper virus.²⁷

In January of 1802 the newspapers announced the formation of the Kine-Pock Institution. The officers were laymen, but a medical board, consisting of Valentine Scamen, Wright Post, and other prominent physicians, was responsible for vaccinating. The group's aims were to provide free vaccination for the poor, maintain a supply of fresh cowpox vaccine for the community, and to disseminate a knowledge of the advantages of the practice to physicians in the surrounding area. One of its first actions was to ask the City Council for an appropriation of \$200 to vaccinate the inmates of the Almshouse. After several months' delay, the Council gave the Institution permission to vaccinate the paupers but refused to put up any money. The Kine-Pock Institution pushed ahead with its work and vaccinated some 500 children during its first year. As the value of this new smallpox preventive became apparent, the City Council changed its position. In consequence, the work of the Institution was turned over to the New York Dispensary and a municipal appropriation of \$200 per year was made available.28

An article on the New York Dispensary in April of 1805 pointed out that it had enlarged its facilities and divided the city into four districts, with a physician for each, ". . . whose duty it will be to give constant attention to the poor, ..." Four consulting physicians had been appointed to assist the attending physicians in difficult or dangerous cases.29 As with the New York Hospital, the number of patients treated at the Dispensary rose steadily. In 1807 a total of 1,136 patients were admitted. The following year the number of admissions increased to 1,340. Since some of the best doctors in New York City served at the Dispensary, it is reasonable to assume that the patients received good medical care. Possibly a qualification should be added-they received the best care available at the time. The five ailments most frequently encountered during the first six months of 1810 were pleurisy, influenza, rheumatism, syphilis, and consumption. In commenting upon the treatment of these diseases, the Dispensary report cheerfully asserted that "a free use of the Lancet, of Calomel and Digitalis has answered our most sanguine expectations. . . ." Whether or not freely letting blood and administering large doses of calomel and other drugs cured any patients, it certainly must have discouraged them from returning to the Dispensary.³⁰

Although the city usually appropriated some money for the Dispensary, most funds came from private contributions, and the trustees were constantly appealing to the public for help. The cost of operations was exceedingly low. For example, in 1812 some 1,658 patients were treated, yet the total income was only \$1,275.56. Four years later 2,866 patients were treated at a cost of \$2,034.69. By 1821 the number of patients jumped to over 8,000 and the Dispensary was forced to increase the number of attending physicians to eight. Two more physicians were employed the following year, and by 1825 the number of patients had grown so large that they were classified according to the nature of their complaints and treated at different hours. Starting at 9 a.m., one hour was given to each of the following categories: surgical diseases, head and chest diseases, abdominal and female diseases, eye and ear diseases, and skin diseases.³¹

A good many of the Dispensary patients were those applying for free vaccination. In January of 1809 the Dispensary notified the public that smallpox was spreading in the city and appealed for a general vaccination. A physician, the notices read, had been appointed to vaccinate the poor on Tuesday and Friday of each week. The days of the great epidemics of the eighteenth century had receded into the past and a combination of apathy and suspicion limited the response. Seven months later the Dispensary reported that it had vaccinated only 419 persons, a relatively small number in relation to the size of New York City. Dr. Gerardus A. Cooper, the physician of the "Kine-Pock Department," complained in his report for 1810 that only 169 persons had undergone vaccination. He felt that this neglect "on the part of parents, especially among the lower class of the community, has chiefly arisen from the almost total disappearance of the smallpox. . . ." He recommended that handbills be distributed to the poor warning them of the dangers of neglecting to vaccinate their children.³²

Without an immediate threat of smallpox, his warnings went unheeded. By 1815 smallpox had reappeared in the city, and in September the Dispensary again informed the public that free vaccination was available for children of the poor. Even in the face of

an epidemic, the public remained apathetic. On December 19, after the weekly bill of mortality showed 17 deaths from smallpox, the City Council appointed a committee to look into the matter. Subsequently, on January 29 the Council granted the Dispensary \$1,000 to cover the cost of a general vaccination of the poor, and, in conjunction with the Board of Health, began an educational campaign to arouse the public. The Council especially asked clergymen, charitable associations, and "intelligent" persons to spread the good word about vaccination among the poor. Despite their efforts, the best available figures show that smallpox killed 94 persons in 1815 and 179 in 1816. The number of smallpox deaths fell off sharply thereafter, and the intensive campaign of 1816 possibly helps to account for the virtual elimination of smallpox during the next eight years. The very success of these efforts proved selfdefeating, for the temporary elimination of smallpox caused apathy to set in, and a smallpox outbreak in 1824 killed almost 400 persons.33

An interesting sidelight on the Dispensary's efforts to promote vaccination was the enactment of a measure to outlaw the use of inoculation in 1816. Variolation or inoculation with smallpox virus had been accepted only slowly in the eighteenth century, but by 1800 it was a well-established practice. The same conservatism which had made people reluctant to accept inoculation made them equally suspicious of vaccination. Unquestionably inoculation prepared the way for vaccination and greatly facilitated its adoption. Yet the survival of the older practice, even in only a few groups, provided a reservoir for smallpox and presented a constant threat to the general public. The 1816 law noted that despite the success of "kine pock" in preventing smallpox, "... many ignorant or evil disposed persons still persist in the practice of communicating the small pox by inoculation...."

In one of the earliest attempts to evaluate the success of vaccination, Dr. Samuel Akerly collected statistics on smallpox deaths in New York from 1804 to 1808. His figures showed a fairly steady decline after 1804, when the deaths totaled 169, until 1808 when a sharp increase to 58 occurred. Akerly concluded, correctly as it turned out, that vaccination would diminish smallpox but would not annihilate it. A more comprehensive study some fifty years later, however, showed that the ratio of smallpox deaths

per hundred fatalities from all causes remained fairly constant during the first half of the nineteenth century. The rate from 1805 to 1814 was 1.9 per 100; during the period 1815 to 1824 it increased to 2.2; from 1825 to 1834 it fell to 1.9; and then returned to 2.2 during the next ten years. The author of this study blamed the steady attrition from smallpox upon the Irish immigrants, who, he wrote, "more than any other class, neglect vaccination." 35

Bloomingdale Asylum

The first attempt to provide other than custodial care for the insane in New York came in the 1790s. According to most sources, mental patients were admitted to the New York Hospital in 1797 and from then until December 31, 1803, some 215 lunatics were treated. By this time, as noted earlier, the Hospital had added a third floor to handle the growing number of insane patients. Three years later, 1806, the State Legislature appropriated funds for the erection of a "Lunatic Asylum." The new building, which officially opened on July 15, 1808, contained 64 rooms and could accommodate from 70 to 75 patients. An arrangement was made with the city to have certain of the insane transferred from the Almshouse to the new Asylum at a charge to the city of \$2.00 per week. Since only the most promising cases were transferred to the Asylum, many of the insane poor remained under restraint at the Almshouse and Bridewell.³⁷

Partly in response to overcrowding and partly as a result of the work of Thomas Eddy and the movement for the "moral treatment" of mental patients, that is, providing cheerful, pleasant surroundings, kindness, and encouragement, the Legislature in 1816 passed an act providing funds to build a new and larger asylum and granting an additional \$10,000 per year to the New York Hospital for its support. Construction began in 1818 and the Bloomingdale Asylum, as it was called, accepted its first patients on July 27, 1821. The new building, which cost \$177,214, was 211 feet long and three stories high. It was situated on a 70-acre tract and could accommodate 200 patients. The inmates were allowed a great deal of freedom, could keep pets or do light tasks, had the use of a library, and were housed in pleasant and clean surroundings. Unfortunately for the poor, although Bloomingdale received considerable financial support from the state, it accepted only private patients.³⁸

Bloomingdale symbolized the hopes of the reformers who were confident that the "moral treatment" could restore most of the mentally ill to a useful role in society. Even though the more severe cases remained locked in jails and basement rooms, for the first time some hope was offered to the families of mental patients. The rate of cures under the "moral treatment" was reported to be surprisingly high, but this purported success may have resulted from a combination of selective admissions and an overly optimistic evaluation of cures. In any event, by the Civil War the "moral treatment" fell out of fashion and for various reasons most mental patients received little more than custodial care.

Bellevue Hospital

For over thirty years before the formal construction of a hospital, the name "Bellevue" was equated in New York City with medical care. As early as 1794 the city rented the buildings on the site known as Bellevue to serve as a temporary hospital during a yellow fever epidemic. When the fever returned the following year, a resident physician was appointed and additional tents and marquees were set up to care for the overflow of patients. At the close of the epidemic, it was decided to lease the Bellevue property. In the following years Bellevue continued to serve as an emergency hospital during the recurrent epidemics. A medical journal, in describing the 186 patients admitted in the summer of 1803, said they belonged to the "most indigent class of society. . . ." The men, it noted, were "long addicted to intemperance in drinking" and most of the women had succumbed to "habits of prostitution." 39

In May of 1805 the Board of Health reported to the City Council that Bellevue Hospital was generally neat and clean but that many of the buildings needed repairs. The Board asked that it be given full control over Bellevue, and its request was granted. In October the Council appropriated funds to erect buildings at Bellevue for the accommodation of the poor, and it appears that, with the cessation of yellow fever after 1805, Bellevue became the City Almshouse.⁴⁰

In 1820 Dr. David Hosack, at that time Resident Physician for the city, launched a campaign for a municipal hospital. At an extraordinary session of the Board of Health, which Hosack had requested, he described having found typhus patients crowded into small, poorly ventilated apartments, and he appealed for action on their behalf. When the Board refused to support his proposals, he gave a public lecture and had it issued in pamphlet form. Although arousing some interest, it was not until the appearance of a fever epidemic in the summer of 1822 that Hosack was able to turn the tide.⁴¹

A committee of the Common Council in January of 1823 reported that the health officials had no choice but to remove those sick with contagious and pestilential fevers to the Marine Hospital on Staten Island, a procedure which was "attended with unpleasant Consequences and is at all times obnoxious to the affected." Among the other disadvantages was that, "owing to the unfavorable State of the wind and tide," patients were often forced to remain on board small boats for a day or more. An appeal was made to the Legislature, which appropriated \$25,000 and authorized the city to conduct a lottery to raise its share of the money for a fever hospital. The law stipulated that the building must be constructed within four years. By 1826, well within the prescribed time, the hospital was completed. Since indigent patients with contagious fevers occupied much of the institution, in these early years it was usually called the "Fever Hospital."

The Lazaretto or Marine Hospital

Lazarettos or pesthouses were common in all the American colonies. Their chief function was to accommodate sick strangers or quarantine any diseased persons found upon vessels coming into a port city. When an epidemic threatened, they were also used to isolate early cases among the sick poor. As already noted, the first use of the Bellevue property in 1794 was as a pesthouse. From 1793 to 1796 Governor's Island and Bedlow's Island alternated as the sites for the official state pesthouse or quarantine hospital. In 1797 the State Legislature provided for the establishment of a permanent quarantine hospital or lazaretto on Governor's Island, with the proviso that the city pay for all of its residents treated at the lazaretto. This institution was in effect a Marine Hospital, since a tax was to be levied upon all passengers and crewmen entering the port and the funds used to provide medical care for sick seamen and immigrants. Any surplus funds were to be applied toward the expenses of seamen or foreigners treated at the New York Hospital. Two years later, it was agreed the lazaretto should be replaced by a permanent Marine Hospital on Staten Island. Since this latter institution continued to care for the city's contagious disease cases, except during the summers when yellow fever was present and Bellevue was opened, occasional municipal funds were given to the Marine Hospital. For example, in May of 1800 the Common Council voted £ 100 to erect two small buildings adjacent to the Marine Hospital to care for epidemic fever cases.⁴³

As the amount of shipping entering the port increased, both the income and the facilities of the Marine Hospital improved. In 1811 the annual appropriation was increased so that an annual surplus might accrue and thus create a fund for rebuilding the institution. However, the heavy demands of the war years quickly consumed the surplus, and the utilization of some of the buildings as barracks hastened their deterioration. Dr. Joseph Bayley, who had served in the Health Office for twelve years, the last three as Health Officer, was succeeded in 1815 by Dr. Benjamin DeWitt. In the summer of 1819 DeWitt, speaking at the opening of the new Marine Hospital, claimed full credit for all improvements that had taken place. When he had first taken office, he asserted, the buildings were dilapidated and falling apart. Without asking for additional appropriations, he had managed to rebuild the station and erect a new hospital. The Evening Post, in reporting his speech, chided him for his failure to give credit either to his predecessors or to the health commissioners.44

Bayley responded to DeWitt's insinuations by pointing out that the poor condition of the Quarantine Station in 1815 was the result of the war years. He then asked DeWitt to account for all of the Hospital funds during the previous four years. The ordinary expenses of the Hospital should have run about \$50,000 during this period, he said, whereas the Hospital had received over \$100,000. Since the new hospital building had cost only \$27,000, he wished to know what Dr. DeWitt had done with the other \$23,000. Judging from the exchange of letters between the two men, Bayley appears in a far better light than DeWitt. Aside from the questions raised during this particular clash, it appears that the Marine Hospital, by culling out the sick from among the incoming passengers and crews, served to minimize the occurrence of serious

epidemic diseases within the city, and, on the whole, it seems to have been run quite well.⁴⁵

Private and Semi-Private Institutions

Other than the New York Dispensary, only one other private infirmary came into existence prior to 1800, and even this one survived only briefly. Influenced by hospital developments in Great Britain, a movement got under way later in the 1790s to establish a lying-in hospital for indigent expectant mothers. An organization, led by Dr. David Hosack, was formed which succeeded in obtaining a charter from the State Legislature on March 1, 1799. The Lying-In Hospital opened that year at 2 Cedar Street, with a board of thirteen governors and three attending physicians. As might be expected, the roster of physicians included familiar names: Drs. John R. B. Rodgers, David Hosack, and William Moore. The board of governors represented a fairly good cross section of the middle and upper classes: seven merchants, one banker, three persons from the law and the ministry, and two about whom the City Directory gave no information. As already noted, the institution was beset by financial difficulties and after two years was absorbed by the New York Hospital.46

The first indication of the development of proprietary hospitals for paying patients came in June of 1812 when Dr. M. Cunningham announced that he had bought a large and commodious house on the corner of Pump Street so as to expand his Infirmary. The Infirmary was open to all patients, and they were free to select their own physician. The only charge was for board and nursing. The first specialty institution, other than the Lying-In Hospital, was the New York Eye Infirmary, founded in August of 1820. It followed the pattern set by the New York Hospital in that it was largely a philanthropic agency, but accepted pay patients. The chief founders were two young graduates of the College of Physicians and Surgeons, Drs. Edward Delafield and John Kearney Rodgers, both of whom had observed the eye infirmary in London. They started with two rooms in a building on Chatham Street and treated 436 patients during the first year. Two prominent doctors, Wright Post and Samuel Bowne, served as consultants. With the help of private subscriptions, the Eye Infirmary was incorporated in 1822, and in 1824 it received a \$1,000 annual grant from the State Legislature. ⁴⁷ In the following years the number of patients grew rapidly. A total of 646 patients were admitted in 1822, 794 in 1823, and 932 in 1824. During 1824, in connection with the sessions of the College of Physicians and Surgeons, a course of lectures on the diseases of the eye was given. By 1825 the Infirmary was firmly entrenched, and was able to provide both competent medical care and valuable clinical experience for medical students. ⁴⁸

In August of 1823 Drs. James R. Manley and Andrew Anderson notified the public that they were opening the New York Infirmary for the Treatment of Diseases of the Lungs. This institution, established with the backing of a group of subscribers, was intended "for the exclusive purpose of gratuitously treating such sick poor in the city of New-York, who labour under diseases of the chest. . . ." The announcement pointed out that according to the city bills of mortality, lung diseases were the major cause of death. There was, moreover, a widespread belief, held even by many "of the best informed physicians," that consumption was incurable, and for this reason patients frequently waited until death was close at hand before applying for treatment. In the hope of learning more about the disease, the two doctors proposed keeping complete case historics and requiring patients to give permission for autopsies. The following April, the managers of the New York Infirmary, in appealing for public support, declared that since opening on August 18, 1823, the Infirmary had treated 83 patients, curing 33, relieving 22, losing 14, and still having 14 under their care. 49 From the beginning of the nineteenth century, the city mortality reports showed consumption to have been the leading cause of death, and the New York Infirmary, which sought both to provide relief and to contribute to medical knowledge, was a welcome addition to the city's medical institutions.

Notes to Chapter 10

- 1. Walsh, History of the Medical Society, 35-36.
- 2. Ibid., 40.
- 3. New-York Medical and Physical Journal, VII (1828), 380-84 (hereinafter cited as N.-Y. Med. & Phys. Jnl.); Report of a Committee of the Medical Society . . . Medical Education (1840), 7-8.
- 4. Walsh, History of the Medical Society, 3-9, 57-61.

- 5. Walsh, History of Medicine in New York, I, 74.
- 6. Walsh, History of the Medical Society, 61-63.
- 7. Report of a Committee of the Medical Society . . . Medical Education (1840), 9 10.
- 8. Walsh, History of the Medical Society, 52; Evening Post, November 6, 1815.
- Exposition of the Transactions Relative to the College of Physicians and Surgeons in the City of New York... (New York, 1812), 3-6; William F. Norwood, History of Medical Education in the United States before the Civil War (Philadelphia, 1944), 113-20.
- 10. Norwood, History of Medical Education, 128-29.
- Christine C. Robbins, David Hosack, Citizen of New York (Philadelphia, 1964), 42; The Medical Repository, III (1800), 414-15.
- 12. Commercial Advertiser, February 7, 1799; The Medical Repository, II (1799), 437, III, (1800), 64-65, new series, VIII (1824), 224-25.
- 13. A History of the Proceedings of the Board of Health . . . 1822, 33-34, 197.
- 14. Peter S. Townsend, An Account of the Yellow Fever, as it prevailed in the City of New York, in the summer and autumn of 1822 (New York, 1823), ix, 277-81.
- 15. Letter of the Hon. Stephen Allen, Mayor of the City of New-York to Joseph Bayley, Health Officer of the Port, . . . and Dr. Bayley's Report Thereon (New York, 1822), 28. Available in the New York Public Library, bound with History of the Proceedings of the Board of Health 1822 (see above, note 13).
- 16. N.-Y. Med. & Phys. Inl., III (1824), 26-28.
- 17. M.C.C., 1784-1831, III, 584.
- N.Y. State Laws, 42d sess., chap. 217, April 13, 1819, V, 279; 31st sess.,
 chap. 155, April 8, 1808, V, 340; M.C.C., 1784-1831, V, 283, 290, XIII, 117.
- 19. Evening Post, September 9, 1805, September 11, 1819.
- 20. Townsend, Account of Yellow Fever, 235.
- 21. N.-Y. Hist. Soc. Colls., 1937, LXX (New York, 1940), 66.
- 22. Stokes, Iconography, V, 1309, 1318, 1330.
- Benson Lossing, History of New York City (New York, 1884), I, 118;
 N.Y. State Laws, 24th sess., chap. 26, March 20, 1801, V, 36.
- 24. The Medical Repository, 2d hexade, 1 (1804), 293; Longworth's Directory, 1805, 83; Pomerantz, New York, 351; T. R. Beck, "An Account of some of the Lunatic Asylums in the United States," N.-Y. Med. & Phys. Jul., VII (1828), 187-88.
- The Medical Repository, 3d hexade, II (1811), 187-88, new series, I (1813), 313; Daily Advertiser, March 22, 1823, March 29, 1825.
- 26. Dunean's Directory, 1792, pp. 208-09, 1793, pp. 229-30; N.Y. State Laws, 18th sess., chap. 61, April 8, 1795, III, 604-07; Charter and Ordinances of the New-York Dispensary (New York, 1797), 30.
- 27. Longworth's Directory, 1803, 60; The Medical Repository, IV (1801), 321-22.
- 28. Evening Post, January 28, 1802; M.C.C., 1784-1831, HI, 86, 98, IV, 23.

- 29. Evening Post, April 27, 1805; The Medical Repository, 2d hexade, III (1806), 83.
- 30. Evening Post, January 9, 1808, January 12, 1809, July 17, 1810.
- 31. Ibid., January 7, 1813, January 9, 1817; Daily Advertiser, January 26, 1822, January 6, 1824; N.-Y. Med. & Phys. Inl., V (1826), 144.
- 32. Evening Post, January 6, July 20, 1809, January 29, 1811.
- 33. *Ibid.*, September 23, December 19, 1815, January 3, 1816; M.C.C., 1784–1831, VIII, 391, 407–08, 451; New York State Assembly Document Number 60 (January 22, 1846), 309.
- 34. An ACT, To prevent the destructive ravages of the Small Pox (New York, 1816), broadside, New York Academy of Medicine collection.
- The Medical Repository, 3d hexade, II (1811), 35; N.-Y. Inl. of Med. & Coll. Sci., new series, XIII (1854), 60, 67.
- 36. N.-Y. Int. of Med. & Surg., I (1839), 307-08; New York Academy of Medicine, Transactions, I (1857), 11. David M. Schneider, in History of Public Welfare in New York State (Chicago, 1938), I, 197-98, reports that the first mental patient was admitted in September, 1792.
- 37. N.-Y. Med. & Phys. Int., VII (1828), 187-90; Schneider, History of Public Welfare, I, 108-99.
- N.Y.A.M., Transactions, 1 (1857), 13-14; N.-Y. Med. & Phys. Inl., I (1822), 105-06.
- Fenwick Beekman, "The Origin of 'Bellevue' Hospital," New-York Historical Society Quarterly, XXXVII (1953), 212-18; M.C.C., 1784-1831,
 II. 100-01, 275, 570; The Medical Repository, 2d hexade, II (1805), 147.
- 40. M.C.C., 1784-1831, III, 748-49; Stokes, Iconography, V, 1438.
- 41. Hardie, Description of New York, 267-69; Lossing, History of New York City, I, 115.
- 42. M.C.C., 1784-1831, XII, 669.70; N.Y. State Laws, 46th sess., chap. 82, March 24, 1823, VI, 92-93.
- N.Y. State Laws, 20th sess., chap. 67, March 30, 1797, IV, 93-95; M.C.C., 1784-1831, II, 626.
- 44. Evening Post, July 8, 1819.
- 45. Ibid., August 14, 1819.
- 46. N.Y. State Laws, 22d sess., chap. 23, March 1, 1799, IV, 330-32; Long-worth's Directory, 1799, 125; Stokes, Iconography, V, 1370.
- Evening Post, June 22, 1812; Hardie, Description of New York, 273-75;
 Lossing, History of New York City, I, 121-23; N.Y. State Laws, 47th sess., chap. 245, April 12, 1824, VI, 306-07.
- 48. Daily Advertiser, January 25, 1823, February 12, 1824, January 19, 1825.
- Ibid., August 15, 1823, April 22, 1824; The Medical Repository, new series, VIII (1824), 223.

11

Health and Social Welfare

In the years from 1790 to 1825, the population of New York City multiplied five-fold, jumping from 33,000 to 166,000. Although the city medical schools were totally inadequate for keeping pace with this dramatic population increase, the ratio of physicians to the population remained about the same. With a population of between 38,000 to 40,000, New York had 64 doctors in 1793. In 1825 there were 430 physicians to serve a total of 166,000 residents. Since obtaining a medical degree was relatively easy, it is safe to assume that many practitioners had few formal qualifications. On the other hand, the United States appealed to venturesome young men, and among the hordes of immigrants were a number of professionally trained individuals, some with degrees from the best schools in Europe. In addition to physicians, the city directories also listed the names of women who classified themselves as nurses. In 1799 there were 24 of them; in 1802 and 1803, 19 and 22, respectively. By 1820 the list of "sick nurses" had increased to 35. These private-duty nurses, who served in the patients' homes, were obviously considered a level above those serving in institutions.¹

Health Statistics

While the ratio of physicians to the population was adequate, the state of medical knowledge was such that little could be done about most of the leading causes of death. The work of John Pintard in collecting mortality statistics and in making this task one of the responsibilities of the City Inspector's Office has already been mentioned. In 1809 the City Council ordered the publication of Pintard's report for the year 1808. In it, he had compiled mortality figures for the years 1802 to 1808, showing an annual range of from 1,930 to 2,352 deaths. The single leading cause of death

was consumption, or tuberculosis, a disorder responsible for an annual average of about 440 deaths. Pintard described it as "a very alarming disease, incidental to some degree to our latitude, but undoubtedly aggravated by the imprudent adoption of Fashions in Dress adapted to more genial climes." The next two causes of death in order of their significance were convulsions (about 200 per year) and infantile flux (about 160 per year), both primarily children's disorders.² The following year, 1809, Pintard took the deaths for a six-year period, 1804–1809, and, comparing them with what he felt was the average yearly population of New York City, arrived at an average annual mortality rate of 1 to 38.8.³

For the year 1809, Pintard reported 2,108 deaths, of which 419 were attributed to consumption and 163 to convulsions. Dr. Samuel L. Mitchell, one of the editors of The Medical Repository, in commenting upon the mortality statistics for 1807 and 1808, declared that consumption was responsible for over one-fifth of all deaths. If the other pulmonic diseases were included, he said, the figure would go to one-fourth, and the addition of the deaths attributed to "debility" and "decay" would raise the total to one-third of all deaths. He estimated that one-fourth of all children died before their first year and almost one-third by the end of the second. The greatest single killer of children, he said, was the croup, a statement open to question, particularly when one considers the high infant death rate from summer flux and diarrhea.4 Relative to Mitchell's statements about the incidence of consumption, City Inspector George Cuming, speaking of the 678 deaths attributed to the disease in 1816, declared that "many cases were returned 'Consumptive' which should have been reported under other heads. ..." This was especially true of children's deaths, he said, for many of those attributed to consumption were in reality due to worms. Among adults, he continued, there was a tendency to spare "the feelings of relations and friends" by classifying ailments "in this general and sweeping complaint; thus covering their infirmities from the public observation. . . ." Even granting the difficulty of diagnosing infant disorders in general and lung diseases in particular, tuberculosis was far and away the leading single cause of death in New York City.5

Whatever the accuracy of Mitchell's estimate, that one-third of all children died before the age of two, the following statistics taken from the reports of the City Inspector show that one-third of all deaths in the city were those of children below the age of two:

	Children under	
Year	Two Years	Total Deaths
1816	600	2,739
1817	807	2,527
1818	1,111	3,265
1819	1,153	3,176
1820	1,228	3,515
1821	1,194	3,542
1822	1,057	3,231
1823	1,194	3,444
1824	1,469	4,341
1825	1,495	5,018

The sharp increase in the mortality figure for 1818 was, according to City Inspector George Cuming, the result of the "excessive heats" during the summer and the "constant influx of emigrants. . ." He specifically mentioned that many immigrant children had died during the summer months. Significantly, typhus, which constantly scourged the over-crowded immigrant vessels, was listed behind consumption as the second leading cause of death."

A subsequent estimate of the mortality rate for New York City at five-year intervals from 1805 to 1860 shows the figures of 1 to 32.98 in 1805, a reduction to 1 to 46.49 in 1810, and then a gradual rise to 1 in 34.78 for 1825. The figure of 1 to 46.49 for 1810 may have been correct, but, if so, the death rate was much lower than normal, for Pintard's calculations for the previous six years of 1 to 38.8 are reasonably accurate. The tendency for the death rate to increase as the century advanced arose from a higher population density in the tenement areas and the entrance of thousands of impoverished immigrants. Those who survived the rigors of the ocean passage were landed sick and debilitated only to face further hardships in a strange and different land. It may be some consolation to the present generation to realize that this winnowing process guaranteed that only the fittest would survive!

The Negro population during the first quarter of the nineteenth

century suffered a disproportionate percentage of the annual deaths. In 1790 they constituted about 10 per cent of the city's population; fifty years later, 1840, this figure had dropped to about 5 per cent. In 1821 Negroes suffered some 550, or 15.5 per cent, of the 3,542 total deaths, although they represented only about 8 per cent of the population. In this same year, 105 of the 715 deaths attributed to consumption were among the Negro population. In 1822 Negro deaths amounted to 396 out of a total of 3,231, or approximately 12.3 per cent. The following year the statistics showed 432 out of 3,444, or about 12.5 per cent. As health conditions worsened in the slum areas, the percentage of Negro deaths rose, despite the fact that their number in relation to the total population was declining. In 1824 Negro deaths amounted to 718 out of a total of 4,341, or 16.5 per cent, and the following year they were 875 out of a death total of 5,018, or 17.4 per cent.8

A casual glance at these figures shows that by 1825 the death rate among Negroes appears to have been at least three times as high as among the white population. Since mortality rates tend to bear an inverse ratio to income and Negroes represented the lowest economic group, the basic reason for their high death rate is obvious. Yet other factors undoubtedly account for the wide spread between whites and Negroes. The whole problem of Negro reactions to specific disorders raises some interesting problems. For example, Negro slaves in the South were highly susceptible to respiratory and enteritic disorders, but they were more resistant to yellow fever and malaria than the whites. The high percentage of Negroes dving from tuberculosis may indicate that the same factors held true for Negroes in the North, although here the question becomes complicated by environmental factors, Whatever the reason, the general health of Negroes in New York City was well below that of the white population.

Before leaving these statistics, it should be pointed out that it was exceedingly difficult to arrive at exact mortality figures for these early years. Pintard was a conscientious individual whose statistics were fairly accurate, but some of his successors in the City Inspector's Office lacked both his zeal and ability. An editorial in one of the New York newspapers in 1825 pointed out that the Coroner had reported 70 "casualty" deaths during the preceding week while the City Inspector showed only 52. However, since

the Coroner's list included such causes as drinking cold water, apoplexy, and so forth, the difference may have been one of classification.

Public Welfare

The onset of the yellow fever epidemics in the 1790s made city officials acutely conscious of the need for a larger and more suitable almshouse. In 1795 the Legislature enacted a law permitting the city to raise f 10,000 by lottery for building purposes, and on May 1, 1797, the new Almshouse was opened. It was a substantial structure, which was just as well since the attempts by Jefferson and Madison to bring economic pressure to bear on Europe and the subsequent outbreak of the War of 1812 seriously disrupted the economy of New York City. In 1808, for example, the State Legislature voted \$450,000 for the relief of the poor. Richard Furman, the superintendent of the Almshouse, reported in 1813 that 2,814 individuals had been admitted, 1,316 had been discharged, and another 233 had died. In addition to those cared for in the poorhouse, the city had assisted 1,973 families, or 8,253 individuals. Interestingly, of the 1,975 families given out-of-door relief the following year, 897 were Negro families. The relatively high percentage of Negroes on poor relief offers a ready explanation for their high mortality rate.10

Depressed conditions in the winter of 1816–1817 led to the formation of a general committee in February to raise funds for the relief of the poor. In short order it raised over \$8,000, most of which was given to charitable organizations or distributed in the form of soup and fuel. On March 4 it was reported that the Soup House had fed 6,373 individuals. Eight days later, a special committee appointed to inquire into the causes of poverty reported at a public meeting that 15,000 individuals, or one-seventh of the city's population, had received either public or private charity. The committee members blamed seven-eighths of the poverty upon the "free and inordinate" use of spirituous liquors, and urged limiting the number of liquor licenses.¹¹

The following November, the general committee reported that it had collected during the previous winter \$113,225.30, in addition to which the city had voted \$3,820 to charitable institutions; another \$8,000 had been raised by private subscription. After de-

ploring that pauperism had "matured into a system of idleness and profligacy," the committee recommended that a thorough check be made on all receiving relief. One way to reduce the number on relief, the committee declared, was to send the poor from out of town back to their point of origin.¹²

While the city and state made extraordinary appropriations in times of economic stress, most relief work was done by private organizations. Those imprisoned for debt were expected to pay for their room and board, and one of the earliest charity organizations, the Society for the Relief of Distressed Debtors, founded in 1787, was dedicated to helping these unfortunates. In 1800 it changed its name to the New York City Humane Society and broadened its activities, although its main concern was with individuals imprisoned for debt. During the year 1811, for example, it supplied food and fuel to 536 debtors and liberated 13 of them. The following year the Society, in reporting the release of 12 debtors illegally jailed, mentioned that in all of these cases it had paid for legal counsel. By this date the Humane Society was also maintaining a Soup House where the poor could obtain food.¹³

In 1797 the Society for the Relief of Poor Widows with Small Children was formed. One of the first activities to its credit was the establishment of an orphan asylum, and at all times it performed yeoman work on behalf of families without a breadwinner. In 1817, for example, the Society assisted 209 widows and 579 children. The recipients of its benevolence, however, were scarcely over-indulged. The Society, in one of its appeals for contributions, mentioned that its limited income permitted an allowance of only 12 shillings (about three dollars) a month to a widow with two to five children! A more general charitable association was the Assistance Society, a group organized in 1809 to provide both food and medical care for the poor. In summarizing its activities for 1812 the Society stated that it had visited and relieved 3,499 individuals at a cost of \$965.85. Appealing for funds, its secretary declared: "The winter has commenced, and the prospect to the laboring and sick poor, is peculiarly gloomy."14

The Orphan Asylum Society, incorporated in 1807, was an outgrowth of the Society for the Relief of Poor Widows with Small Children. While it began by private subscription, it was soon successful in getting state aid. The Legislature first authorized the

City Board of Health to build an asylum from the proceeds of a lottery, and later on appropriated funds for operating expenses. The report for 1812 acknowledged various gifts, including an annual grant of \$500 from the Legislature. It noted that 84 children were presently living in the Orphanage and that another 68 had been bound out to respectable families. An indication that the institution was unusually well run is that during the first six years of the Orphan Asylum's existence, only three children died. This figure is all the more remarkable when considered in the light of the five to ten per cent annual mortality rate which was considered normal for institutions of this type in the nineteenth century. 15

The Manumission Society, whose aim, as its name implies, was freeing slaves, was the first organization to exhibit an awareness of the atrocious conditions under which the young chimney sweeps worked. In 1811 the City Council, urged on by the Manumission Society, sent a memorial to the Legislature asking for authority to regulate the sweeping of chimneys. The Council explained that since no responsibility was "attached to the poor little sweeps or to their cruel taskmasters, the business, at present, is executed carelessly, and that chimneys, not being attended to, at regular intervals, frequently occasion accidents." The wording of the memorial leaves it questionable as to whether the Council was more concerned with the state of the chimneys or with the working conditions of the sweeps. The following January, the Council drafted an ordinance which required the licensing of chimney sweeps, established prices for their work, and placed some limitations on the employment of young boys. 16

In 1816 a second law regulating chimney sweeping was passed. Like the first one, its chief concern was to see that the chimney sweeps performed their task properly and did not charge too much. The limited protection which had been given to the apprentices by the first act evidently irritated their masters and led them to bring pressure to bear on the Council. One of the last provisions of the new law reduced the minimum age for sweeper boys from twelve to eleven. If the English practice was followed, this meant that as soon as a boy reached his tenth birthday, he was assumed to be in his eleventh year and thus available for employment. The law had little meaning, in any event, since parents or

guardians who would condemn children to the notoriously short and grim life of an apprentice chimney boy would have few qualms about adding a year or two to the boy's age. A year or so later an editorial in one of the newspapers, speaking of the chimney sweeps, referred to "those wragged little wretches, whose daily employment it is to perform a species of labor more severe and filthy than any we exact from beasts of burden." After admitting that their work was essential, the editor urged the introduction of a new type of fireplace which would eliminate the need for small boys to climb inside chimneys.¹⁷

Aside from a mild concern for the sweeper boys, there was virtually no interest expressed in the other forms of child labor. The rural tradition of children working on the farm made child labor in factories and industries seem a perfectly normal condition. Far more interest was expressed in the morals of the workers than in their physical environment, although in justice it should be pointed out that the two were generally equated. Poverty was considered the natural consequence of sin and vice, and it was assumed that improving morality would automatically reduce poverty. That intemperance and immorality led to poverty was seen all too clearly, but only a few enlightened observers recognized a two-way relationship, that is, poverty and degradation were conducive to intemperance and sin.

A writer in The Medical Repository reported that the city had 1,200 liquor shops in 1803 and 1,400 in 1804—and this with a total population of only 60,489. In 1811 the City Council was asked to buy copies of Dr. Benjamin Rush's pamphlet "on the destructive effects of intemperate drinking. . . ." Acting on the recommendation of its Committee on Charity, the Council voted to distribute 2,000 copies of the pamphlet. An indignant citizen in 1816 questioned the work being done by the burgeoning charity groups on the grounds that their efforts were only "partial expedients, as long as the public continue to legalize upwards of FIFTEEN HUN-DRED sources of Drunkenness, Disease, Poverty, Felony and Murder." He followed with an urgent appeal for the regulation of the sale of "ardent liquors." Whatever the exact relationship between drunkenness and poverty, excessive drinking was a part of the vicious poverty cycle, a fact recognized by most of the early social reformers.18

Another major social issue which had equally grave health implications was that of prostitution. A medical writer declared in 1804 that "bawdy-houses" are "connived at by the magistrates and by society," Although licensed by common consent, he continued, "they are under no regulation of the Health Office, nor subjected as such to any restraint by the municipality." For this reason, venereal disease was kept "constantly in action, and diffused far and wide. . . ." He quoted one of the New York police justices to the effect that the city had 1,050 common prostitutes and 160 bawdy and dancing houses. This figure, the writer claimed, did not include kept mistresses and private concubines, and he estimated that the true number of prostitutes in the city was about 2,100.19 Since the population could have been no more than 65,000 at this time, the estimate of 2,100 seems unusually high. Even 1,050 would have represented a good proportion of the women of child-bearing age.

Just as the majority of Americans in the first half of the twentieth century refused to face up either to the need for or the existence of birth control, so their counterparts in the nineteenth century stoutly maintained their facade of respectability by refusing to acknowledge that prostitution and venereal disease was a major health problem. The double standard of morality permitted men to break with impunity the moral laws on sex, while the occasional punishments inflicted upon prostitutes no doubt helped to clear their consciences. Now and then physicians wrote serious articles on prostitution and venereal disease, but most Americans gained a more lurid picture of "scarlet women" from the many preachers and revivalists who, consciously or not, appealed to the prurience of their audiences by graphically depicting sin. Since venereal disease was the wage of sin, it could scarcely be considered a health problem to be attacked by community effort. Hence prostitution and venereal disease continued to flourish.

For the moral reformers, there were safer battles to fight. A Common Council committee reporting on the need for an act to suppress immorality in 1812 drew up a "long and offensive catalogue of abounding immoralities, which seem to bid defiance to the Laws of Society." First among these was the wholesale fashion in which the Sunday laws were broken. The members were shocked at the open stores, skating, ball playing, and carriage and

horse-riding for pleasure, "but that an Editor and his patrons can be found hardy enough to print and support a Sunday Newspaper, is a reflection at which the mind of morality cannot but recoil." The "vast number of brothels and houses of seduction" was well down the list of "abounding immoralities." An equally grave problem which drew the wrath of all decent Christians was the sight of young men and boys swimming off the docks "stark naked." With the Sabbath desecrated and major social evils such as these at hand, it was small wonder that the problem of venereal disease was completely overshadowed.²⁰

Notes to Chapter 11

- Medical Register of the City of New York (New York, 1862), 143;
 Longworth's Directory, 1799, 396-97, 1802, 362-63, 1803, 319, 1820, 491.
- 2. Return of Deaths in the City of New York for the Years 1804, 1805, 1806, 1807, and 1808 (New York, 1809).
- A Comparative Statement of the Number of Deaths in the City of New-York during the Years 1804, 1805, 1806, 1807, 1808, and 1809 (New York, 1810), 8.
- 4. Ibid., 5, 8; The Medical Repository, 3d hexade, I (1810), 335-36.
- 5. Report of Deaths in the City and County of New York for the Year 1816 (New York, 1817), 11-12.
- City Inspector's Report, 1818, 5-11. See the City Inspector's Reports, 1816-1825.
- 7. Medical Register of the City of New York, 1862, 151-52.
- Negro mortality statistics were derived from the City Inspector's Reports, 1821-1825; the population statistics were compiled from the Compendium of the Ninth Census (Washington, D.C., 1872) 75-77.
- 9. Daily Advertiser, July 27, 1825.
- N.Y. State Laws, 18th sess., chap. 51, April 6, 1795, III, 594-95; Evening Post, April 23, 1808, May 10, 1814; The Medical Repository, new series, 1 (1813), 314-15.
- 11. Evening Post, March 1, 4, 12, 1817.
- 12. Ihid., November 26, 1817.
- 13. Ibid., February 12, 1812, January 16, 1813.
- 14. Ibid., December 19, 1817, January 9, 1813.
- 15. Ibid., January 12, 1813; Schneider, History of Public Welfare, I, 187-88.
- 16. M.C.C., 1784-1831, VI, 524, VII, 4.
- 17. Evening Post, April 26, 1816, May 29, 1817.
- The Medical Repository, 2d hexade, I (1804), 89; Jerome M. Schneck, "Benjamin Rush, Intemperate Drinking, and the Common Council of the City of New York," Bull. Hist. Med., XXXVII (1963), 377-79; Evening Post, March 5, 1816.

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^{19.} The Medical Repository, 2d hexade, I (1804), 90-91.

^{20.} New York Common Council, March 30, 1812, The Committee to ... report ... on the Provisions of the Act, entitled, "An act for suppressing immorality," (New York, n.d.) | N.-Y. Hist. Soc. pamphlet collection]; Evening Post, July 16, 1819.

Part III. The City Overwhelmed

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It is difficult to determine the dominant public health theme in the forty-one years from 1825 to the passage of the Metropolitan Health Act of 1866. At first glance one might well assume that the recurrent epidemics of Asiatic cholera, beginning in 1832, supplied the main impetus to the public health movement. Without doubt, these epidemics made a tremendous impact upon New Yorkers. Their enormous toll in the more squalid tenement areas gave convincing proof of the relationship between dirt and disease and lent credence to the assertions of the sanitationists. In mobilizing the city's resources to meet the threat from, or the invasion of, Asiatic cholera, municipal authorities and voluntary groups gained a new understanding of their responsibilities and at the same time gradually built up more effective administrative machinery.

Even more decisive than the impact of any particular disease, however, was the ever-widening stream of immigrants pouring in and through the Port of New York. While there are no reliable figures prior to 1819, Pomerantz estimates that about 3,000 a year landed in New York City from 1789 to 1794. Although the French Revolutionary and Napoleonic Wars retarded migration for twenty years, a steady trickle of immigrants of French, Irish, and other nationalities landed in New York. The first wave of the postwar years came in 1817 when over 7,600 immigrants arrived. In the period from March, 1818, to November, 1819, the immigrant ranks were swelled by another 28,000. Henceforth, the yearly tide of immigrants sweeping into and through the city was a constant factor in the health of New York.¹

The desperate condition of many Irish immigrants was touched upon earlier when it was noted that the City Council had to appropriate several hundred dollars in the late 1790s to provide food, shelter, and medical care for destitute newcomers confined at the quarantine grounds. In 1798 the State Legislature permitted the city to collect a one per cent tax on all goods sold at auction within the city limits, the proceeds of which were to be spent for the care of the foreign poor. The city was, at this time, collecting a head tax on all individuals entering the port to help pay for the quarantine installations and inspections, but unscrupulous captains frequently evaded the New York port fees by landing their passengers on the New Jersey or Connecticut coast, from whence they were carried by small boats into New York City.²

While this revenue eased the burden on New York City, it did nothing to improve shipboard conditions. The Medical Repository carried a grim description of the situation aboard several vessels which had carried cargoes to Ireland in 1801 and returned with their holds jammed with "needy and wretched" passengers. Many of the latter died shortly after they were brought ashore and the rest were inconceivably filthy. "By the pukings and purgings, and by the urinary and perspiratory discharges of these miscrable creatures, literally wallowing in their own filth," the account read, "the bodies of many of them were besmeared and incrusted, forming a layer of excrementitious grime from head to foot," The Health Officer had been compelled to destroy or burn much of the bedding and clothing and had separated the sick from each other by placing them in tents so "that their pestilential exhalations might be diluted and wafted off." One vessel was so filthy that Dr. Bayley refused permission for the ship to dock in the city.3

As the flow of Irish immigrants reached its flood tide in the late 1840s and 1850s, shipboard conditions showed little improvement and the voyage remained just as long. In 1852 a historian of the Irish emigration estimated the average duration of the voyage from Liverpool to New York to be thirty-five days, and from London to New York forty-three and one half days. Occasionally, he added, after spending as much as seventy days at sea, ships were driven back to a British port where the passengers were immediately loaded aboard another vessel to complete their passage.⁴ Food supplies were usually minimal and sanitation was always primitive. Under these circumstances, it is not surprising that ship

fever (typhus) raged through the immigrant vessels nor that smallpox and other communicable diseases were rife.

Aside from the threat of disease to the city, the very magnitude of the onrushing tide of migration drastically changed New York. This is clearly shown by the following chart estimating the number of immigrants:

1820–1830	92,884	1840–1850	1,146,241
1830-1840	407,716	1850-1860	1,223,585

An official municipal publication in 1869 stated that over four million immigrants had arrived in the preceding twenty-one years. The two main immigrant streams came from Ireland and the German principalities, each of which supplied approximately one and a half million.⁵ The Irish were impoverished by repression and famine. In the case of the Germans, the failure of the 1848 revolutions drove many middle-class liberals to migrate, and their general economic and social level was well above that of the Irish. Since moving west required capital, a far higher percentage of Germans and other more prosperous nationality groups were able to push into the interior, leaving the Irish to fill up the city slums.

The immigrants who swelled the population of New York, like the native additions to the city, came largely from rural backgrounds. Housing in the city was always in short supply and the limited resources of the newcomers gave them no choice but to move into already crowded tenements and slums. Accustomed to a low standard of living and the absence of personal hygiene, they quickly adapted to the filth and squalor which characterized most working-class neighborhoods. Few of them had experienced democratic government and unscrupulous members of their own nationality groups were quickly able to weld them into potent political machines. For most of them, government was a hated abstraction and the right of suffrage completely meaningless. Hence they happily traded their votes to the only social workers available, the party backs or ward heelers. It was they who in times of emergency provided jobs, food, and legal assistance. As political organization developed, patronage and personal favors helped to cement voting blocks. Political support came to be based largely upon personal relationships and cultural affiliations. That corrupt and inefficient officers controlled the city was of no significance to the average voter, nor was he overly concerned with the dilapidated, crowded, and filthy tenements in which he lived. Brutalized and degraded by his environment, he was content to find escape in the countless grog shops. The disgust and horror which middle-class reformers could scarcely conceal when they visited the foul stinking courts, alleys, and cellars in which so many of the poor spent their short lives did not endear them to the objects of their pity, and merely confirmed the suspicion and envy with which the poor viewed the well-to-do.

In the post-Revolutionary period, city officials had difficulty in coping with the ever-increasing population and the resultant urban problems, but their successors were almost overwhelmed. From 1830 to 1860, New York's population jumped from about 200,000 to over 800,000. The demand for housing created by this influx jammed every conceivable structure-warehouses, cellars, shanties, and almost any building with a roof, while avaricious builders, unrestricted by sanitary and building codes, threw up flimsy tenements lacking even the most elementary sanitary conveniences. In the tenement areas one or two privies often served fifty or more individuals. The drainage system, already noted, was designed to carry off surface water rather than sewage, although, it should be added, the thousands of overflowing privies and cesspools made the distinction purely academic. The system for street cleaning and removing public nuisances was both corrupt and inefficient. The private contractors hired by the city to handle the job did as little as possible, usually concentrating their efforts upon a few main streets. The emptying of privies and cesspools was left solely to private enterprise. In slum areas absentee landlords saw little reason for wasting any part of their substantial profits merely for the convenience of the tenants, and the latter could not afford to have the contents of the privies removed. Even where a few tenants might have been willing to pay their share, the problem of assessing costs in a tenement house containing from fifty to two hundred people made such action impossible. The net effect was that New York, like major cities everywhere, soon became mired in a sea of garbage and sewage. The introduction of the Croton water system was a major step forward, but public wells at street intersections, with their supplies constantly replenished by the drainage from filthy streets and overflowing privies, still provided a good part of the cooking and drinking water in the poorer districts. Obviously this water was unsafe for drinking, but for those accustomed to its sharp tangy odor and flavor, Croton water must have seemed bland and tasteless indeed.

The tidal waves of immigration which inundated New York City immensely complicated the normal growth problems and at the same time made their solution much more difficult. The low standard of living of most newcomers and their willingness to accept starvation wages tended to reduce the economic level of all workers. The rapid fortunes gained by exploiting immigrant labor in shops and factories plus the equally profitable business of renting shoddy housing and selling bad food and liquor created many nouveaux riches, whose display of wealth merely accentuated the sharp contrast between social classes. The slums of New York were no worse than those in European cities, which contained the accumulated filth of centuries, but, as one historian noted, the "proximity of poverty and opulence in New York . . . gave greater emphasis to the gulf between the two."

The ignorance, apathy, and clannishness of the immigrant groups made communication between them and the more humane and enlightened American middle-class reformers almost impossible. In England the barriers were not so great since the working class was more willing to accept upper-class leadership and to give the reformers a hearing. On the other hand, the Irish immigrants, with good reason, had little faith in anyone who represented a ruling class or a social clite. Generations of bitter experience had given them little reason to believe that hard work, frugality, respect for property, and other middle-class virtues would guarantee an improvement in one's social and economic class. Religious and other cultural differences widened the breach, while in the case of Germans and other Continentals, language created an even greater barrier. Thus the moral appeals of American liberal reformers were voices crying in a wilderness.

The inability of responsible citizens to communicate with the foreign-born became more significant as this latter group grew in numbers. Once politicians realized the power to be gained by manipulating the votes of naturalized citizens, scant attention was paid to the five-year residence requirement for naturalization,

and the huge Irish and German influx which occurred in the 1850s soon relegated native-born voters to a minority position. According to the census of 1865, there were 77,475 naturalized citizens registered to vote and only 51,500 native-born voters. Faced with these conditions, many well-to-do citizens who might not have led reform movements but who would have been willing to support them, simply washed their hands of all civic affairs. Those whose sense of responsibility would not permit such a negative attitude looked to the state government for relief. Despairing completely of the City Council, they undermined its position by appealing to the State Legislature for a series of semi-independent commissions and agencies, the effect of which was to remove a good share of city government from the hands of city officers.

The State Legislature was no paragon of virtue, but it was better than the city government, which as early as 1851 was given the name, "the Council of Forty Thieves." The process of removing health matters from the jurisdiction of city officials dated well before the notorious corruption of the latter half of the nineteenth century. The Health Office, founded in 1796, certainly illustrates this tendency. The state law creating the agency provided that the Health Officer and health commissioners were to be appointed by the Governor and that the agency be given its own source of income. Since the Health Office was concerned largely with quarantine, its establishment as a semi-independent agency reflected, in part, a suspicion that a municipally administered quarantine system might be subject to pressure from local commercial interests. The creation of the Metropolitan Board of Health in 1866, another of the semi-independent agencies, was based on the valid assumption that neither the voters of New York City nor their elected representatives could be counted on to support an effective public health program.

Black as the picture of New York appears, there were some redeeming features. The appalling descriptions of tenement conditions which can be found in newspapers, medical journals, and municipal and state commission reports were regrettably all too true, but they presented only one side of the city. An English woman who published her impressions of New York in 1848 commented upon its bright, clean, cheerful appearance as compared to English cities and added that its streets were not as dirty as those

in Paris. Other English observers were astonished at the large number of free public schools and the magnificent hotels and buildings. The burgeoning industrial cities of England, which had encountered the social and sanitary problems of urbanism well before New York, were still groping their way toward a solution of their health and sanitary problems. Given a homogeneous population, New York, which was relatively free of tradition and entrenched privilege, might well have led the way in social and sanitary reform, for there was no dearth of able and intelligent leaders. It was their misfortune, however, to live in a city which was the main gateway to America, the meeting place for many diverse cultures. Under these circumstances their accomplishments were all the greater.

The task of any public health reformer is always twofold; he must make the articulate and informed public and the members of the power structure conscious of a particular social need, while at the same time he must awaken the victims of social injustice to the real cause of their difficulties. This latter requires delicate handling, for although a degraded class tends vaguely to resent its lot, the resentment is too often misdirected. The successful reformer, then, is the one who can channel this bitterness in the right direction. The rising tide of dissatisfaction in mid-nineteenth century New York was expressed in many forms, such as the nativist movement and clashes between Protestants and Catholics, and occasionally it flared into bloody riots. The Draft Riot of 1863 was ostensibly aimed at Negroes and the war, but it quickly became an attack upon established wealth. For several days the mob looted, pillaged, and burned the main part of town and it was not suppressed until the militia shot down hundreds of rioters.¹⁰ It is clear that the riot was symptomatic of a general unrest and discontent. It is equally clear that the riot brought home to the wellto-do the need for some measure of social action. One can scarcely read contemporary writings without being aware that middle and upper-class New Yorkers were shaken by the bitterness and hatred evinced by the lower economic groups during this riot. More than any other reformers, public health leaders had been drawing public attention to the desperate condition of the poor. They had demonstrated the relationship between poverty and disease and, more significantly, between a degraded environment and a lack of morality. The draft riot of 1863 gave proof to their assertions and helped to convince the well-to-do that health and social reform was cheaper than revolution.

Notes to Part III

- Schneider, History of Public Welfare, I, 130; Pomerantz, New York, 202-03, 207.
- 2. Schneider, History of Public Welfare, 1, 132-34.
- 3. The Medical Repository, V (1802), 69-70.
- 4. E. E. Hale, Letters on Irish Immigration (Boston, 1852), 16-17.
- Robert Ernst, Immigrant Life in New York City, 1825-1863 (New York, 1949), 187; Joseph Shannon, Manual of the Corporation of the City of New York (New York, 1869), 136-37.
- Max Berger, "British Impressions of New York a Century Ago," New York History, XXVII (1946), 150.
- 7. Gustavus Myers, The History of Tammany Hall (New York, 1901), 250.
- 8. Ibid., 184 85.
- 9. Berger, "British Impressions," N.Y. Hist., XXVII, 142-46, 151.
- Joel T. Headley, The Great Riots of New York (New York, 1873), 142–288.

12

The Administration of Public Health

As of 1825 the tide of immigration had only begun, yellow fever still threatened but the danger seemed to be receding, and the only diseases winnowing the population were familiar ones, such as the respiratory ailments, various enteric disorders, and the rather vague and amorphous group known as "fevers." All of these were familiar complaints and aroused no undue public alarm. The mortality statistics collected by the City Inspector's Office showed a steady climb in the number of deaths from tuberculosis, leading a few of the physicians to issue warnings, but city officials considered that they had more pressing problems. Medical care was viewed largely as a matter between the individual and his physician, except for those who, for reasons of poverty or other causes, were wards of the city. Preventive medicine was a sound idea in the abstract, but it produced neither votes nor profits. Indeed, as most practical politicians realized, its success was rarely dramatic and the negative results in terms of preventing epidemics made it difficult to justify the expenses involved. In the second quarter of the nineteenth century, few politicians at any level of government reflected on the subject at all. Except in times of crisis, notably during the Asiatic cholera invasions, they were content to let well enough alone.

Municipal health affairs were in the hands of three administrative agencies, two permanent and one temporary. The first of these, the Health Office, which was established in 1796, consisted of the Health Officer, the Resident Physician, and the Health Commissioner. Rather confusingly, the three officers were usually referred to as the Commissioners of Health. All three were usually appointed by the Governor and Senate. The Health Officer was

the chief quarantine official whose duty it was to examine incoming vessels for cases of contagious diseases. He also served as physician to the Marine Hospital, located in 1825 on Staten Island. The Resident Physician theoretically looked after the health of the city at large, but in practice he was concerned with contagious diseases. He was required to visit all suspicious cases reported by the local doctors. The Health Commissioner was the administrative head of the Health Office and its chief financial officer. He collected the head tax on incoming passengers and sailors, kept records of the fees charged by the Health Officer for inspecting vessels, and handled all financial matters with respect to the Marine Hospital. All three of these posts were prime political plums, since only the vaguest financial records were kept.

The second permanent administrative unit was the City Inspector's Office. Originally created in 1804, this Office gradually assumed more responsibility until it had taken over a good part of the duties which would normally have been handled by the Board of Health. The latter body, the third health agency, in reality was simply the Mayor and Aldermen acting in a health capacity during times of emergency. Under normal circumstances the Board functioned only during the summer months, and even then it rarely met as a body.

The close interrelationship between the Health Office, City Inspector's Office, and the Board of Health makes it difficult to unravel their activities, but in an attempt to bring some order into the picture, each will be dealt with separately. Taking them in reverse order, the membership of the Board of Health, according to a state law passed in 1823, was to be determined by the Mayor and Common Council. Accordingly, a city ordinance was passed creating a Board of Health consisting of the Mayor, Recorder, and Aldermen. The Mayor served as president, and in this capacity he usually met daily with the three health commissioners during the summer months. The Board of Health technically was responsible for enforcing all existing state and city sanitary and health laws and was empowered to enact local ordinances for the removal of nuisances or to ensure cleanliness. The duties and powers of the Board of Health sound far more impressive than they were in fact. As noted earlier, the Board was essentially an emergency body, and most of its duties were normally handled by the Health Office, the City Inspector's Office, and the Mayor and Council.

In the years immediately following the last of the yellow fever outbreaks, the Board of Health considered that it had little to do other than publishing routine notices drawing the public's attention to the various health laws. In September of 1826, however, the Board suddenly discovered that its existence was of doubtful legal validity. At that time, ordinances passed by the municipality automatically expired after three years, and the one appointing the Board had been enacted in May of 1823. The problem was solved on October 9 when the Council renewed the 1823 ordinance. A subsequent amendment specified that the Mayor, Recorder, and any other five members of the Board, a total of seven, would constitute a quorum.2 In May of 1827 the Board published the text of an ordinance respecting the duties of the Resident Physician and the Health Commissioner. While these two officers were appointed by the state, their duties necessarily brought them in close contact with the city officials, to whom they were in some degree responsible. The law specified among other things that the office of the Board of Health was to be in the City Hall and that all communications to the Board were to be in writing. Much of the law, which described the duties of the three health commissioners, will be discussed later, but two sections specified their responsibilities to the city government. One section stated that either the Resident Physician or the Health Commissioner was required to visit all sick persons reported to them by the Mayor or any member of the Board of Health. The other asserted that the health commissioners must notify the Mayor within twentyfour hours of any deaths arising from yellow, bilious, pestilential, or infectious fevers which came to their attention.3

The following year, 1828, the Board, under the title, Address of the Board of Health of the City of New York, to their Fellow Citizens, issued a pamphlet of over twenty pages describing its organization, powers, and duties, and citing the sundry quarantine regulations and other measures for domestic sanitation. Among the so-called "internal regulations" were laws regulating street cleaning, garbage collection, and burials, and a series of ordinances dealing with such matters as "noisome substances," the sale of

spoiled and putrid provisions, and the construction of privies. Among the powers of the Board was the right to appoint health wardens when necessary. In addition to health wardens, the street-cleaning laws specified that eleven street inspectors were to be appointed to enforce the laws. According to the city directories, no health wardens were appointed for several years, and the street inspectors were appointed by and responsible to the City Inspector.

Although a quick glance at the health laws gives the impression of a comprehensive sanitary program, the Board, in listing its duties for the benefit of the public, demonstrated a narrow view of its responsibilities. It was the duty of the Board, the pamphlet read, to prevent the spread of disease, to isolate infected houses or families, and to exercise all powers that "the public good shall require." The last of these was comprehensive enough to have permitted a wide sphere of action, but in practice these powers were rarely used. Even the phrase "whenever necessary" used in conjunction with the right to appoint health wardens implied that in normal times such personnel was not needed. As of the late 1820s the Board had only three employees, a sceretary and two assistants. Their duties could not have been too pressing since the Board functioned only during the summer months. In any event, the secretary's main duty was to publish the city health laws each spring. As memories of the vellow fever epidemics gradually faded, even less attention was given to health matters. In 1831, the year preceding the advent of Asiatic cholera, the Common Council did not even appoint a standing committee on health, and the initial summer appropriation for the Board of Health amounted to only \$200,6

The events of the summer of 1832, however, showed that the Board of Health could function in times of dire necessity. As Asiatic cholera pursued its course through Europe and threatened New York, the leading American port, the only action taken by the Board of Health was to send a report to Congress in January suggesting that it was the federal government's responsibility to prevent the introduction of cholera and urging the appointment of a sanitary commission to investigate the disease. As spring advanced and the danger grew, Mayor Walter Bowne took the initiative by proclaiming a strict quarantine against most European

and Asian ports. About this same time the City Council formed a joint committee to suggest ways for improving the street cleaning system, and, urged on by the Mayor, a new ordinance was passed on June 13.7 Two days later, news that the cholera was present in Quebec and Montreal heightened the tension and stimulated the City Council to vote \$25,000 for the Board of Health "to use in such manner as may be thought advisable, as the erecting of hospitals, and other means, to alleviate and prevent the cholera." The Board promptly ordered all aldermen and assistant aldermen to be zealous in enforcing the health laws and promoting cleanliness in their respective wards. At the same time it appointed a special commission of two physicians to proceed to Montreal and Quebec to investigate the cholera.8 Meanwhile, the Medical Society on its own initiative organized a special fifteen-man committee to recommend preventive measures. The suggestions issued by this group, which reflected prevailing medical beliefs, were based on the assumption that environmental conditions and individual ability to resist disease were the chief determinants in the prevention of epidemies. The members recommended a thorough cleaning of streets and alleys, disinfection of privies and cesspools, and made an appeal to the residents to be calm, live temperately, and keep themselves clean.9 By any measure, the advice was sound, but for the crowded and bemired slum dweller it had little meaning.

By the time New Yorkers heard of the presence of cholera in Montreal, the disease had already entered upstate New York. This news led the Governor to call a special session of the Legislature for June 21. Acting with rare speed, a health act passed both Houses and was signed by the Governor within two days. It provided for a rigid quarantine along the Canadian frontier and ordered towns and villages in counties bordering Lakes Eric, Ontario, and Champlain, the Hudson and St. Lawrence Rivers, or on any of the canals within the state to appoint local health boards. Since the law was essentially a quarantine measure, the duties of these boards related almost exclusively to the enforcement of quarantine and the isolation of the sick. Like most early health measures, the act was considered a temporary expedient—a final clause stated that it would expire on February 1, 1833. The only effect of the measure upon New York City, which already had a health

board, was to stimulate municipal officials to more energetic action.

By the end of June several cases of Asiatic cholera had appeared in the city, but the Board of Health and the Mayor refused to admit publicly that the disease was present. The panie which often followed the public announcement of the presence of an epidemic disease did provide some justification for withholding information until the fact was established with certainty, but in view of the spreading rumors and general apprehension, the Board of Health in this instance merely discredited itself. The Medical Society, irritated by the Board's hesitation and feeling that time was essential, publicly announced the presence of cholera cases on July 2. The general reaction was much as might be expected. Taking the physicians at their word, thousands of residents began a mass exodus. Many businessmen, however, were outraged at the Medical Society for disrupting the economic life of their community. After all, they argued, nine cases did not constitute an epidemic, and if the announcement were premature, it would cause a needless financial loss. William Dunlap, a well-to-do citizen, grumbled on July o that if the public had not been so forewarned it would scarcely have noticed the disease. John Pintard, the prominent merchant and banker, called the announcement "an impertinent interference" with the Board of Health.11

Jarred into action, the Board of Health met immediately and agreed to hold daily meetings while the cholera was present. Following a practice which had developed during the yellow fever epidemics, the Board appointed a seven-man Special Medical Council to serve in an advisory capacity. The duties of the physicians on this Council were to visit cholera cases, give advice to the Board of Health, and to inform and quiet the public mind. The Board's action in this instance may have been an attempt to mollify the physicians, many of whom were quite indignant about the criticism levied against their Society. If this is correct, the effort was not too successful. On July 6 a tri-weekly publication, The Cholera Bulletin, appeared under the auspicies of "an association of physicians." Its stated purpose was to keep the public fully informed about the cholera, and it faithfully reported the course of the epidemic and the steps taken to mitigate its ravages. In so doing, its editors were sharply critical of the Board of Health for

neglecting elementary precautionary measures and failing, during the epidemic, to do anything about the lamentable condition of the poor.¹²

The Board of Health, which had been granted \$25,000, on July 5 announced that it intended opening the Bridewell and Jail for the reception of cholera patients. As the number of cases increased, it opened five cholera hospitals, but like most of its efforts, these steps were a little belated. Meanwhile, it had begun publishing daily reports showing the number of cases and deaths.¹³

In characteristic fashion, the cholera spread rapidly through the city, reaching its peak about July 20. The economic stagnation brought about by the mass exodus in late June and early July seriously distressed the working classes and the ravages of the epidemic intensified their sufferings. Newspaper editors and other writers criticized the Board for neglecting these people, but city officials who constituted the Board were in accord with the traditional view that charity was best left to private benevolence. The one concession which it made was to solicit food and clothing for patients in the cholera hospitals. However, the strenuous measures to clean up the city provided some additional work for the unemployed, and, since so many families were out of town, the Board requested the City Council to hire more watchmen to guard the vacant homes.

The close relationship between disease, dirt, and poverty was clearly evident, and cholcra, which struck most savagely in the crowded and filthy tenements, gave proof to the thesis. The general assumption that the Christian virtues of temperance, hard work, and thrift brought almost certain prosperity had as its logical corollary the belief that poverty arose from vice, intemperance, and laziness. Thus when the Special Medical Council proclaimed that "the disease in the city is confined to the imprudent, the intemperate, and to those who injure themselves by taking improper medicines," few respectable citizens questioned what seemed to be a fundamental truth. In conjunction with the Board of Health, a campaign was started to protect the common people by raising their moral standards. Public notices warned them against such dangerous practices as intemperate eating and drinking, and all citizens were advised to avoid laboring in the heat of the day and getting wet.¹⁴ Precisely how men whose livelihood

depended upon hard, daily outside work could avoid the last two was never stated explicitly, nor did anyone see the irony in advising the dozens of tenement families sharing one hydrant and two or three privies to practice personal cleanliness.

During the first four weeks of July, the peak month, over 3,500 cases and almost 1,800 deaths were recorded from cholera. In August the number of cases fell off sharply, but the disease lingered on throughout the fall. The cost of maintaining cholera hospitals and enforcing the many health regulations soon exhausted the original health appropriation of \$25,000. On August 1 the Mayor approved another \$25,000 grant, and a few days later the City Comptroller asked for authority to raise an additional \$100,000 which he estimated the Board would need over and above the funds appropriated. It is not clear what action was taken on this request, but during the next three months further appropriations amounting to \$50,000 were approved for the Board of Health. 15

A good part of the Board's funds was spent in removing nuisances, filling in stagnant pools, and other sanitary measures. For example, when the Board of Aldermen was asked to consider a resolution giving the health wardens authority to remove nuisances dangerous to public health, a special committee reported the following day that existing city ordinances empowered them to do so. It is safe to assume, in light of the genial corruption which characterized municipal governments in those days, that the Board's handling of its funds was not free of politics. One writer accused the Board of appointing inspectors on the basis of politics rather than merit. 16 Since aldermen on the Common Council were all members of the Board of Health, the Common Council magnanimously voted to pay the members of the Board \$5 a day for their services. On December 4 the Board of Aldermen, which had been studying the objections raised to members of the Common Council receiving double pay, after much soul-searching decided there was nothing legally or morally wrong about the practice.¹⁷

In addition to the per diem for the Board members, another \$7,000 was paid to the Special Medical Committee. A committee of the Board of Assistant Aldermen investigating the expenditures of the Board of Health during the epidemic reported that President Alexander II. Stevens of the Special Medical Council had received \$1,525 and that the other members were paid from \$715

to \$915 each. The investigators declared that they could not understand what these physicians had done, since they did not have charge of any hospitals, had not visited any patients at the medical stations, nor had they recommended any particular treatment. The committee also noted that while the Medical Committee members were collecting relatively large sums of money, many physicians who worked in the hospitals had received very little compensation. The investigating committee may not have been completely objective, since it asked what the Board was going to pay the alderman from the Sixth Ward who had rendered valuable service while supervising the Crosby Street Hospital. Despite its criticism, the committee declared that the Board of Health deserved the confidence of the citizens and recommended an additional appropriation to cover its remaining obligations.¹⁸

A final accounting showed that the Board of Health had spent about \$118,000. Approximately 40 per cent of this was accounted for by the sanitary program and the salaries of the health wardens. Of the remainder, a major share was devoted to the various hospitals and almshouses. All told, six temporary hospitals had been put into operation, one of which, the Crosby Street Hospital, remained open for 106 days. A total of 2,394 patients were cared for in these institutions at a cost of slightly over \$36,000. In addition, the Board had subsidized medical care for many patients in the other New York hospitals.¹⁹

In evaluating its own work at the end of the year, the executive committee of the Board of Health noted that certain individuals had taken advantage of the crisis to obtain extortionate prices for their goods and services, thereby preventing the Board from receiving full value for its money. The committee recommended that in the event of a future emergency the Board employ three physicians with responsibility for hiring all medical personnel and that it establish a central purchasing agency, complete with a warehouse.

The committee further urged that drugs be purchased whole-sale and an apothecary employed to dispense them.²⁰ In justice to the Board of Health, it should be pointed out that the city was in dire straits during July, the peak month of the outbreak. Goods and services of all kinds were in great demand, and there was real opposition to the establishment of cholera hospitals. Everyone

favored cholera hospitals in the abstract, but no one wanted them in his own neighborhood. Although opposed by mass meetings and threats of violence, the Board had resolutely pushed ahead. It had not done as much as some of its critics wished, but it had cared for the sick, and through almshouses and other means, provided some measure of economic relief.

As was always the case following a major epidemic, the city remained health-conscious for a year or two. Farly in June of 1833 the Council took up the matter of appointing a Board of Health. After some political wrangling, it was agreed that the Mayor and all councilmen would constitute the Board and that the assistant alderman in each ward would serve as a health warden. Spurred on by sporadic outbreaks of cholera, the Board of Health was once again prepared for action by the end of June. A pamphlet was issued to the public giving the sanitary and quarantine regulations and listing the names and addresses of all city health wardens and inspectors. At this time each ward had two health wardens and a deputy health warden. These officials were assisted by a street inspector, who, although appointed by the City Inspector, was responsible for keeping the streets free of nuisances.²¹

The following summer, 1834, the Board again met early in June and appointed inspectors and health wardens, although this year the number of health wardens was reduced to one for each ward. On June 30 Mayor Cornelius Lawrence declared that the city's health was good and all health laws were being strictly enforced. Nonetheless, cholera again made its appearance although on a much reduced scale. Since it was not considered epidemic in either 1833 or 1834, the Board of Health contented itself by remaining as an observer rather than as an active participant—the health wardens reporting breaches of the health code and the Board maintaining a record of cholera cases and deaths. Even this latter task may not have been done too well. One of the newspapers complained in August of 1834 that the Board of Health had reported 64 deaths from cholera while the City Inspector had reported 134.²²

During the succeeding years the Board of Health played a negligible role in the city government, a fact clearly shown by the city budget. In estimating the city's expenses for the year begin-

ning May 1, 1834, only \$3,000 was assigned to the Board of Health.²³ As New York's population soared in the following years, the Board's budget increased, but in no way commensurate with the emerging health problems. In 1837 some \$14,000 was allocated to it, most of which went to pay the salaries of the 16 health wardens. These latter received \$2.00 per day or \$626 a year. The following year 17 health wardens were appointed, but in what was probably an economy move arising from the depression of 1837, their per diem was reduced to \$1.50. In January of 1839 the proposed Board of Health budget of \$14,000 was reduced to \$12,500. Inasmuch as the total expenditure by the city was close to \$1,500,000, the Board of Health was receiving less than one per cent.²⁴

If one could assume that the City Fathers were carefully husbanding the tax receipts and allocating expenditures with an eye to the city's welfare, one might still question their judgment in assigning such a pittance to the Board of Health. Unfortunately, there is little basis for such an assumption. A most revealing statement on this score was made by a committee studying the rising municipal expenditures. Among its recommendations to the commissioners of the Almshouse was one which states simply: "A prohibition of public feasting on appropriations for the poor." Even more revealing is a report from the Comptroller showing the amount spent by city officials for champagne, wine, other liquors, and "segars" from 1837 to 1839. In 1837 the sum was over \$1,500, in 1838 almost \$2,500, and in 1839 slightly over \$3,200.25 In this latter year, this slush fund was equal to about one-fourth of the appropriation for the Board of Health!

With no major epidemic diseases to arouse the public conscience, in the ensuing years the Board of Health steadily declined into impotence. Its expenses were estimated at \$5,000 in 1842 and \$4,000 in 1843. In the latter year a conscientious finance committee seeking ways to reduce city expenditures (as well they might) noted that the Board had spent only \$2,976 of its \$4,000 appropriation and suggested abolishing two positions, the assistant to the Board and the deputy health warden. It felt that the savings could be applied "towards other expenditures more necessary." The duties of certain health wardens already had been given to the dock masters, and the committee recommended that henceforth

the street inspectors handle the work of the health wardens.²⁶ By 1847 the proposed budget for the Board of Health was down to \$2,000, and most internal health administration was in the hands of the City Inspector's Office. In 1849, when the city charter was amended by the State Legislature, legal recognition was given to this transition by a law specifically stating that the City Inspector's Department "shall have cognizance of all matters relative to the public health of said city....²⁷

In May of this same year New York's long respite from cholera ended. After a relatively slow start, the death toll climbed sharply, reached a peak in July and then steadily diminished. By the end of the year over 5,000 New Yorkers had fallen victim to the disease. On this occasion the Board of Health responded to the emergency with surprising speed. On May 16 a Sanatory Committee, consisting of five physicians and nine laymen, was appointed. The instructions given to the Committee were to provide hospitals for the impoverished sick, to eliminate the exciting causes of the epidemic, and arrest the disease in its preliminary stages. In connection with its second aim, the Board of Health and other municipal officers collaborated so effectively that the Daily Tribune, a traditional critic of the city authorities, declared on May 18 that "the most prompt and thorough measures have been taken to give the City such a cleaning as it has not had for years."28 Within a few days a temporary hospital had been opened in a three-story building. As the number of cases mounted, the Board of Health took over four school buildings for their accommodation. In so doing it precipitated a sharp clash with the Board of Education, which strongly objected to the temporary loss of its property. At the same time the Board encountered strong opposition from neighboring residents who considered the presence of a cholera hospital a threat to their security. Nonetheless, despite public meetings and bitter denunciations, the Board pushed ahead with its hospital program.29

In addition to providing hospitals for the more serious cases, two physicians, well supplied with medicines, were assigned to each police station and another twelve doctors were appointed to visit the homes of the poor in those districts where the disease was most virulent. The Sanatory Committee also collaborated with a chemist to see if any special characteristic in the atmos-

phere was contributing to the epidemic. To keep the public informed, the Committee's actions were given widespread publicity in the newspapers, and broadsides and pamphlets were distributed. Not neglecting the moral side, the Committee circularized ministers urging them to stress to their congregations the need for moderation, temperance, and a calm, composed state of mind. One of the most difficult decisions the Committee had to make related to such enterprises as bone-boiling and fat-rendering establishments. In addition to being an obvious public nuisance, they were also thought to be a menace to the city's health. The Committee, recognizing that its decision involved the livelihood of many workers, was reluctant to close them, but it did order those establishments which it felt were most dangerous to cease operations during the epidemic.³⁰

In December, at the end of its work, the Sanatory Committee reported that it had spent a total of \$55,372.05. The largest single expenditure, it stated, had been the cost of hiring physicians and maintaining the cholera hospitals. The second major expense was the cost of its street cleaning and sanitary measures. The Committee mentioned also that it had been forced to allocate a good part of its funds for the care of destitute immigrants who continued to arrive in the city, even during the peak months of the outbreak, at the rate of almost 23,000 per month.³¹

The Board of Health, operating through its Sanatory Committee, had demonstrated again in 1849 that it could be an effective agency when the need arose. Unfortunately, public health was still not equated with preventive medicine. Health agencies, other than those connected with quarantine, considered their primary task to be that of combating or mitigating outbreaks of disease rather than taking preventive steps. Moreover, while most civic leaders conceded that dirt and crowding were conducive to epidemics, few were convinced that a strong and effective sanitary program was either necessary or economically feasible. In consequence, once the epidemic was over, the Board of Health lapsed into its customary lethargy.

As indicated earlier, the Board of Health up to this time had been in effect the Mayor and Common Council acting in a health capacity. In 1850 a new state law eliminated this almost fictitious body by investing all legislative powers hitherto exercised by the New York City Board of Health in the hands of the Mayor and Common Council, the act simply stating that these municipal officials would constitute a Board of Health whenever they dealt with health matters. One provision in the law outraged many citizens by declaring that the Board of Health was to act behind closed doors. Another section created a Health Committee which was to consist of the presidents of the Board of Aldermen and the Board of Assistant Aldermen, the Health Officer, Resident Physician, Health Commissioner, and City Inspector, all of whom were to be known as health commissioners.³² This body in effect replaced the old Board of Health, and in the ensuing years was referred to as either the Board of Health or the Health Committee.

This newly established body was no more diligent than its predecessor. In August of 1850 an indignant editorial in one of the medical journals referred to the Board of Health as invisible and intangible. It had not met at all until the summer was far advanced, the editor wrote, and all it was doing was debating—while dysentery was epidemic and cholera threatening. The Board officially adjourned for the season on October 1, but in view of the paucity of its accomplishments, few New Yorkers must have been aware of the fact. In December the Common Council, never a body to overlook merit among its own membership, remembered to vote \$250 to each of its two presidents for their services as health commissioners.³³

For the next fifteen years neither the official Board of Health nor the Health Committee exactly distinguished themselves in the cause of the city's health, although a brief flurry of activity occurred in connection with the 1854 cholera epidemic. In the spring of 1852 the editor of the Daily Tribune commented that the only feature worth noting about the proceedings of the Board of Assistant Aldermen was an attempt to place the Quarantine Station and the Marine Hospital under the control of the Board of Health. The purpose, the Daily Tribune charged, was to bundle every Whig out of office. This same Democratic Common Council then passed a bill dismissing all health wardens from office. City Inspector A. W. White, a Whig, determined to fight the Council and a long legal battle ensued. At one time the Mayor ordered the Police Department to take over the duties of the health wardens. In the end, the Council won the battle, and appointed its own

wardens. The *Daily Tribune* gleefully reported on August 28 that one of these newly appointed Loco-Foco (Democratic) health wardens had just been arrested for fatally stabbing a man.³⁴

The one occasion when the Board of Health evinced any real indication of life came, as mentioned earlier, in the summer of 1854, but even here its efforts were lackadaisical compared with its burst of energy during the cholera epidemic of 1849. One explanation is that Asiatic cholera had been lingering in the city for several years and had lost some of its strangeness and terror. Another factor which may explain the Board's lethargy was the relative mildness of the outbreak. Throughout the entire period the newspapers and medical journals excoriated the Board, but its members seem not to have heard the outcries.

Early in June there was a public clamor against the Board of Health and city officials in general over the deplorable sanitary conditions, and a few tentative steps were taken to remedy matters. Meanwhile, the number of cases was climbing steadily. On June 25 the Board opened the Franklin Street Hospital, and about a month later the Mott Street Hospital. Other than establishing these two temporary hospitals, and making a few gestures in the direction of sanitation, the Board of Health did little to justify its existence. At the beginning of July the editor of a medical journal commented ironically that the announcement of a few dozen deaths from cholera apparently had not disturbed anyone's equanimity, not even "that most important and learned body corporate, our illustrious Board of Health, for they have profoundly slept over every other subject, except their own per diem. . . . " Nothing had been done, he said, to clean up the city, nor did he expect it "until the epidemic shall be upon us. . . ." A month later he wrote that the Board had just begun to remove some of the nuisances dangerous to health, adding bitterly that it might be better if the epidemic had grown worse and frightened away the Mayor and Board of Health, leaving the citizens to rely upon their own resources.35 Throughout the summer newspapers and medical journals continued to denounce the Board, but its members went calmly on their way, paying little heed. No effort was made to mollify the physicians by asking for their advice nor were any real concessions made to the sanitary reformers. The apathy of the Board during this outbreak outraged a good many publicspirited citizens and undoubtedly contributed to the rising demand for civic reform.

For the next few years newspapers continued to grumble about the secret meetings of the Board of Health, but little attention was paid to their complaints. Repeatedly the City Inspector urged that the legal processes for removing nuisances be simplified, but his appeals, too, went unheeded. This situation desperately needed reforming, since complaints about sanitary conditions made to any city official were usually referred to the City Inspector. He investigated and made a recommendation to the Common Council, which then transmitted this recommendation to subcommittees of the Board of Aldermen and Board of Assistant Aldermen. In some cases the Council had to convene as a Board of Health to pass the necessary ordinance, but in any event the whole process was so long and tortuous that little was accomplished.

A newspaper editorial in 1850 reflected the general feeling about the Board of Health. After mentioning that the Mayor had refused to call the Board into session, the editorialist professed to support his position asking sarcastically: "What does the Board of Health know about health or disease? What could it intelligently do toward putting the City into a wholesome sanitary condition?"37 Other than handling quarantine matters, it is difficult to state precisely what the Board of Health was doing at this time. The city financial records show that it spent \$10,600 during the spring quarter of 1860, About \$3,000 was paid to one H. B. Griffin at the rate of \$1,300 a month for removing the contents of sinks. Another \$1,000 was paid for the removal of dead animals, and almost \$1,600 was paid to workmen in the Potter's Field. Just why these jobs were not done by the street cleaners or the City Inspector's Department is not clear. Presumably some of them were special cases which required immediate action. The largest single sum, \$2,500, was paid for the travel expenses of a Joint Special Committee which went to Boston.³⁸ It is comforting to know that while the health officials may not have accomplished much within the city, they represented New York with elegance and distinction in their travels.

In 1861 a rather bitter description of the city's public health administration aptly summarized the state of affairs prior to the establishment of the Metropolitan Board of Health. It would be impossible, the writer declared, to invent anything "more inefficient or worthless than the present system of managing the sanitary affairs of this great City." It consisted of a "so-called" Board of Health whose members "know nothing, and care less, about sanitary science . . .;" six health commissioners "who have neither the power nor authority to take any efficient actions whatever . . .;" and the City Inspector's Department, which has too long "been a sort of sinceure hospital for broken-down political hacks." 39

Notes to Chapter 12

- 1. Hardie, Description of New York, 269-70.
- 2. M.C.C., 1784-1831, XV, 612, 628-29, XVII, 683.
- 3. Bye Law to Regulate the duties of the Resident Physician and Health Commissioner, Board of Health, May 26, 1827 (New York, 1827) [N.-Y. Hist. Soc. pamphlet collection].
- 4. Address of the Board of Health of the City of New York, to their Fellow Citizens, 1828 (New York, 1828).
- 5. Ibid., 16-17.
- 6. Proceedings of the Board of Aldermen, 1, 25, 100-01.
- Evening Post, January 11, 1832; Proc. of Bd. of Aldermen, III, 17, 66-67;
 George Rosen, History of Public Health (New York, 1958), 21.
- 8. Proc. of Rd. of Aldermen, III, 80; Evening Post, June 18, 1832.
- 9. Charles E. Rosenberg, The Cholera Years (Chicago, 1962), 22-23.
- 10. N.Y. State Laws, 55th sess., chap. 333, June 22, 1832, pp. 581-84.
- Diary of William Dunlap, 1766 1839, III, in N. Y. Hist. Soc. Colls., LXIV (New York, 1930), 602; Letters from John Pintard to bis Daughter, IV, 66.
- 12. Evening Post, July 5, 1832; Cholera Bulletin, July 6, 9, 11, 13, 1832.
- 13. Proc. of Bd. of Aldermen, III, 149, 159.
- Questions of the Board of Health in Relation to Malignant Cholera (New York, 1832).
- 15. Proc. of Bd. of Aldermen, III, 165, 192, 224, 309.
- 16. Ibid., 171-72, 175; Cholera Bulletin, July 9, 1832.
- 17. Documents of the Board of Aldermen . . . and Assts., no. 56, II, 159-66.
- 18. Ibid., no. 49, II, 114-19.
- 19. Ibid., no. 77, II, 396-97.
- 20. Ibid., 393-98.
- 21. Ibid., no. 8, III, 41-43; Evening Post, June 25, 30, 1833; New York City Board of Health, Publication issued July 1, 1833, containing extracts of laws and ordinances (New York, 1833) [N.-Y. Hist. Soc. pamphlet collection].
- Sun, May 30, August 26, 1834; Evening Post, June 7, 1834; Docs. of Bd. of Assts., no. 7, I, 40.

- 23. Docs. of Bd. of Assts., no. 2, I, 12-13.
- 24. Does, of Bd. of Aldermen, nos. 85, 116, III, 552-53, 743-44; nos. 8, 26, V, 93, 276-77; Evening Post, January 2, 1839.
- 25. Docs. of Bd. of Aldermen, nos. 5, 67, VI, 80, 665-75.
- 26. Ibid., no. 64, VIII, 493-94; no. 18, X, pt. 1, pp. 186, 191.
- 27. N.Y. State Laws, 71d sess., chap. 187, April 2, 1849, p. 282.
- 28. City Inspector's Report, II (1847-51), 503; Daily Tribune, May 18, 1849.
- 29. Report of the Proceedings of the Sanatory Committee of the Board of Health, in Relation to the Cholera as it Prevailed in New York in 1849 (New York, 1849), 18-23.
- 30. Ibid., 26-35.
- 31. Docs. of Bd. of Aldermen, no. 19, XVI, 228-31.
- 32. An Act Relative to the Public Health in the City of New-York passed April 10, 1850 (Albany, 1850) [N.-Y. Hist. Soc. pamphlet collection].
- New-York Medical Gazette and Journal of Health, 1 (1850), 67-68 (Hereinafter cited as N.-Y. Med. Gaz. & Jul. of Health); Daily Times, October 3, December 3, 1851.
- Daily Tribune, March 9, May 19, August 28, 1852; Daily Times, July 15, 1852; Docs. of Bd. of Aldermen, 1008, 20, 38, XIX, pt. 1, pp. 517-23, 809-12.
- 35. N.-Y. Med. Gaz. & Int. of Health, V (1854), 325-26, 365-66.
- 36. For examples, see Daily Times, August 7, 1855, May 30, 1856; Daily Tribune, August 9, 1856.
- 37. Times, May 20, 1859.
- 38. Docs. of Bd. of Aldermen, no. 15, XXVII, pt. 2, pp. 6-7.
- 39. Times, September 22, 1861.

13

The Office of City Inspector

From the standpoint of health and sanitation, the Office of City Inspector was one of considerable importance. Throughout the first half of the nineteenth century, the duties remained much as they had been defined by a state law in 1807: to investigate nuisances and prepare corrective ordinances for the City Council; to collect mortality and business statistics; to carry out instructions from the Board of Health; to inspect buildings and properties; and to enforce fire regulations. The City Inspector had little power in his own right, but the more able occupants of the office often served as gadflies, prodding the Common Council into action. Moreover, the nature of the City Inspector's work gave him a valuable insight into the operations of the city government and his annual reports painted a good general picture of the health and social conditions of the citizens.

The nuisances which the City Inspector was called upon to investigate ranged from overflowing privies to objectionable processing plants, and his work often carried him into the most fetid slums, since the chief violations of the building codes were to be found in the dilapidated and crowded warrens where the poor huddled together. The caliber of the city inspectors was surprisingly high, considering the general level of municipal administrators, although toward the end of the period the quality deteriorated. As with all sensitive positions, office-holders who were too insistent upon reform--Dr. John H. Griscom is a good case in point—did not last long, but even the worst of them pushed the cause of sanitary and health reform.

The valuable work performed by the City Inspector's Office was always done with a token staff and a negligible budget. One of the better office-holders, Dr. George Cuming, who served for several years before his death in 1829, had only two assistants. This pattern remained true for many years, although at a later date the City Inspector was given some control over the health wardens and street inspectors. With this small staff he was expected to prepare a host of statistical returns, make a wide variety of inspections, and draw up sanitary ordinances for the City Council or Board of Health.

One of his most valuable services was the preparation of the annual bill of mortality. Up until 1837 the deaths were classified according to sex, race, age groups, and causes. While the classification of the causes of death, which included infantile flux, convulsions, dropsy, old age, and some other vague categories, was far from ideal, it did present a good general picture. Despite the shortcomings of medical knowledge, the major epidemic diseases were identified, and the diagnosis of a disorder such as consumption or tuberculosis was reasonably accurate. The reports also carried a section entitled "Remarks," in which a commentary was made upon any variations from the preceding year and upon the general state of health. Some city inspectors compiled mortality statistics going back many years and sought to calculate life expectancy rates at given periods. A number of physicians held the office on occasions, a fact which may have contributed to improving the mortality returns.

Illustrative of the comments to be found in the "Remarks" is a notation by Dr. George Cuming in his report for 1826. There were fewer cases of fever, he wrote, but more deaths from whooping cough. Smallpox, he added, was increasing in spite of "the exertions which have been made by public institutions and enlightened individuals . . . ," and he stressed the need for a more general vaccination, a point which he and his successors repeatedly made. A subsequent City Inspector commented in 1829 that infantile diseases had been the same except for scarlet fever which excited "a degree of alarm." Fortunately, he continued, the physicians had good luck in treating it. Gerret Forbes, City Inspector in 1834, showed a strong social conscience in his "Remarks." After decrying the increasing number of deaths attributable to "intemperance, and the crowded and filthy state in which a great portion of our population live," he declared that "we have serious cause to regret that there is in our City so many mercenary landlords,

who only contrive in what manner they can stow the greatest number of human beings in the smallest space." Dr. John Sickels the following year spoke of the absence of cholera "as a cause of congratulation and Providential Kindness." He also reported that the deaths from consumption were "as one to five" and that small-pox and diseases produced by intemperance were on the rise.

In 1824 an effort was made to relieve the City Inspector of recording the quantities of the city's imports and exports. The Common Council first refused on the grounds that this information was too useful. The following year a Council committee reversed this stand and recommended that the City Inspector be released from the job "and left to attend to the more important duties of his Office." Early in 1826 an ordinance to this effect was passed by the Council. However, in 1833 and 1834 the City Inspector was still issuing an annual report on the grain, salt, coal, and wood he had inspected, and it is not clear whether he was inspecting for quality or merely keeping records of the amounts shipped or received.²

Several attempts were made to have the City Inspector collect complete vital statistics rather than merely record the number of burials. Dr. Charles Lee, in February of 1828, proposed a birth and death registry law to the City Council but his petition was sidetracked. Two years later Dr. Felix Pascalis asked for the establishment of a registry of births, marriages, and deaths, but his petition, too, although gaining some support in the City Council. also came to naught. Editor John James Graves of the New-York Medical Journal, deploying the lack of accurate vital statistics in 1830, blamed much of the difficulty upon the physicians. Individual reputations and the happiness of families, he wrote, "will often demand inviolable secrecy from the accoucheur, and in a community of over four hundred physicians, where competition exists to so great a degree, and where the means of subsistence is sought by many . . . there will always be found those, who will seize upon the opportunity of reporting fictitious cases, to give a false importance to the extent of their practice." While little progress was made on the score of vital statistics, in 1837 Dr. Henry G. Dunnel drastically altered the method for reporting the annual deaths. Instead of listing the causes of death alphabetically, he classified them under such headings as diseases of the brain and nervous system, respiratory system, circulatory system, digestive system, urinary and genital system, and cruptive fevers. He also included the age, sex, and color of the victims of each disease and gave the nativity of all deceased. Dunnel also published a thirty-year compendium of the city's mortality statistics. While his was not the first such survey made, it was by far the best classified and most complete summary. He showed the life expectancy in the city at five-year intervals from 1805 to 1835 and gave a yearly breakdown on the percentage of deaths for children five years and under.⁴

Dunnel also drew attention to another factor contributing to the inadequacy of the bills of mortality (as the annual death returns were called), the growing tendency for New Yorkers to be buried outside the city limits. The ordinance of 1823 had forbidden burials in certain crowded areas on Manhattan. In consequence, gravevards had been established in the suburbs and surrounding countryside. Since the city had no jurisdiction over these new cemeteries, the sextons were not obliged to report burials to the City Inspector's Office. Dunnel pointed out that in addition to causing serious errors in the bills of mortality, this omission meant that the city had no opportunity to investigate suspicious deaths. He recommended that bridge tenders and captains of all vessels be required to ask for a death certificate from a physician or the coroner's office before removing or permitting any body to be removed from the city. A second and equally important proposal was that the city establish a register of births, but in both instances Dunnel was a little too far ahead of his time.5 Considering the state of medical knowledge and the public attitude toward giving such information, Dr. Dunnel carried the reporting of vital statistics about as far as it could go.

Important as was the reporting of mortality statistics, it was only one aspect of the City Inspector's job. On June 6, 1831, for example, the Common Council concurred in some thirteen ordinances "for correcting sundry nuisances" presented to them by the City Inspector. Passing on a variety of measures offered by the City Inspector was almost a regular feature of the meetings of the Board of Aldermen and Board of Assistant Aldermen. The number of proposed ordinances varied, but the sheer mechanics of drawing them up must have been time-consuming, particularly as

in the case of a meeting on December 28, 1831, when the City Inspector presented sixty of these nuisance ordinances. It would have been much simpler to have given the City Inspector authority to take action, but the Common Council apparently preferred to keep administrative control in its own hands. In 1832 an effort was made to remedy this situation in part when a resolution was offered to the Board of Aldermen empowering the City Inspector to deal with all cases involving "surface regulation" of property which was part private and part municipal. The resolution was referred to the Street Committee, where it promptly disappeared from sight.⁶

As the city undertook new projects or moved into new administrative areas, the responsibility was often assigned to the City Inspector. In 1831 when the Board of Aldermen appropriated \$7,500 for the purchase of 500 gas lamps, the City Inspector was directed to buy rhem. Among the many reports compiled in the Inspector's Office was an annual one on the number and type of buildings erected in New York City. In 1834, for example, some 877 new buildings were listed. The report showed the number of buildings in each ward and gave a brief description of each structure—brick or wood, number of stories, store, church, factory, and so forth.

The wide range of responsibilities given to the City Inspector is shown in the case of an 1835 amendment to one of the sanitary laws which forbade the use of tubs or privies unless they were tight and well secured. The law further stated that the contents could not rise higher than three inches from the top of the tub. The penalty for violation of the law was set at \$10 and the City Inspector was made responsible for its enforcement.⁷ It was not expected that he or his assistants would perform the inspection; rather the City Inspector's Office was to investigate any complaints and, if justified, institute proceedings. Even as it was expanding the duties of the City Inspector the Common Council still kept a tight check upon his activities. In 1837 an ordinance was proposed empowering the City Inspector to correct or abate nuisances found upon any property if the owner was absent or unknown, or could not be found, and to charge the costs against the property. A small clause, however, which would have nullified the effectiveness of the measure, stated that this could only be done with the approval of the alderman and assistant alderman of the ward in which the nuisance existed. With politics carried on in an atmosphere of personal favors and considerable venality, the City Inspector must have been completely frustrated.

Throughout these years the City Inspector never received a salary commensurate with the importance of his office. In 1830, at a time when the Superintendent of Streets was receiving \$1,500 a year, the City Inspector was paid \$800. By 1834 his salary had moved up to \$1,000 and in 1836 the committee on salaries of the Board of Aldermen recommended increasing it to \$1,600, on the grounds that the City Inspector's duties were arduous and required skill and judgment in their performance.9 Although willing to grant an occasional raise, the Common Council in these years never provided the City Inspector with an adequate staff. The health wardens, who could have been a valuable adjunct to the City Inspector's staff, were appointed by and responsible to the Common Council, which looked upon the position as another form of patronage. A systematic comparison of the names of health wardens with Longworth's and Doggett's city directories shows that the majority were tradesmen, including some tavern owners, and only rarely was a physician appointed to the position. By the early 1840s a good proportion, half or more, of the health wardens also served as dock masters. Occasional individuals simultaneously held three positions, dock master, street inspector, and health warden. In 1844 dock masters were paid \$400, while health wardens usually received \$100, making a combined salary of \$500.10 In 1845 the work of the health wardens was assumed by the Police Department, a change which may have been for the better but one which did not improve the position of the City Inspector.

Dr. William A. Walters, the successor to Dr. Dunnel, performed his duties adequately, but added no particular lustre to the office. In 1842 one of the great figures in New York public health, Dr. John H. Griscom, was appointed City Inspector, a step which many municipal officials must have regretted. Griscom, a graduate of the University of Pennsylvania, had served as physician of the New York Dispensary and resident physician at the New York Hospital, two positions which gave him considerable insight into health conditions among the city's poor. His report for the

year 1842 was a landmark in New York public health. Whereas Dr. Walters' report for the preceding year had contained only three pages of "Remarks," briefly commenting upon the year's statistics, Griscom's report contained an extensive section on mortality statistics (including a refinement of Dunnel's classification system) and some 55 pages of commentary. In addition to giving a good picture of sanitary conditions within the city, Griscom clearly set forth the thesis that preventive action was a major aim of public health. Interestingly, Griscom illustrated the developing sense of professional unity among public health leaders when he mentioned that his disease classification system was similar to the one used by the Registrar General of England and by Lemuel Shattuck in his exposé of health conditions in Boston.¹¹

In his "Remarks" Dr. Griscom touched briefly upon the high ratio of deaths among immigrants and then turned to what he called the avoidable causes of sickness and mortality. First among these he ranked crowded and poorly ventilated housing. He particularly assailed the custom of holding school in basement rooms, blaming much of the sickness and death among children on the fact that they were crowded together for many hours a day in small unventilated rooms. He next took up the subject of cellars and rear court dwellings. In preparation for his report, he had made a survey of all such apartments, and he estimated that almost 34,000 residents were jammed into these substandard dwellings. He cited instances of cellars containing as many as 48 people and of two-family rear dwellings in which as many as eight families resided. Drawing upon his own experiences as a dispensary physician, Griscom related how "frequently, in searching for a patient living in some cellar, my attention has been attracted to the place by a peculiar and pauseous effluvium, issuing from the door, indicative of the nature and condition of the inmates. . . ." He bitterly condemned the cupidity which, he said, took advantage of abject destitution and converted cellar storage rooms "into living graves for human beings."12

Beyond the sheer physical impact of this deplorable housing, Griscom spoke of the "moral degradation" which it induced. The lack of privacy, he wrote, engendered "an indifference to the common decencies of life . . . which result in a depressing effect upon the physiological energies, and powerfully heighten the



Dr. John H. Griscom, one of the greatest figures in the early health movement, Courtesy of the New York Public Library.

susceptibility to . . . diseases. . . ." Adding to this psychological trauma, he continued, was the constant fear of the poor that they might be expelled from their homes at a moment's notice. He concluded his description of housing by urging that the city forbid the use of cellar dwellings, limit the number of residents in any given building, and make all such building regulations necessary for the welfare of the occupants. The construction of improved homes for the poor, he suggested, "presents a large field for the exercise of philanthropy, by the benevolent capitalist." Such a project, he thought, would yield a sound financial return and bring an even greater profit in terms of "the increased happiness," health, morals and comfort of the inmates, and good order of society...." With rare understanding for his day, Griscom wrote that he could scarcely blame the laborer for seeking an escape in the grog shop, and that he felt improved housing would do much to remove the cause.13

Griscom then went on to condemn the chiffoniers or ragpickers, a degraded group who eked out a living by pawing through the garbage and rubbish. The best solution, he thought, was to eliminate the occupation by establishing a proper system of street cleaning and garbage removal. He called also for a better means to remove night-soil, arguing that the work was both degrading and unhealthy. He condemned the omnipresent pigsties and slaughterhouses and launched an attack upon the production of swill milk, that is, milk produced by cows fed upon the swill from the distilleries. He urged the construction of a complete underground sewerage and drainage system for the city under the supervision of educated and skillful sanitary engineers. The introduction of Croton water, he wrote, had now made it possible to clean the streets and flush out the sewers. To promote personal hygiene, he suggested that the Croton water be made freely available to the population. In these recommendations, as in others, Griscom frequently quoted Edwin Chadwick, the English health reformer who had first conceived of sanitary reform as essentially an engineering problem. Citing Chadwick again, Griscom appealed for a study of occupational health, arguing that improved health and longer life expectancy among the productive population made public health a sound investment. 14

Not content with exposing the city's deplorable health condi-

tions and proposing a comprehensive public health program, in April of 1843 Dr. Griscom submitted a specific proposal to Mayor Robert Morris for recognizing the existing health agencies. Speaking of the health wardens, Griscom declared: "Neither the present, nor any previous incumbents, have urged any claim whatever to the Knowledge requisite for a faithful performance of the duties which should be, but never have been, performed by them. ... "The qualifications for effective health wardens or medical police, he said, could "be found only in the ranks of the welleducated portion of the medical profession." He proposed to replace the 17 health wardens with 12 medical inspectors. These latter should serve also as dispensary physicians and be appointed by the trustees of the New York Dispensary. In this way, the positions would be removed from partisan politics and the combined salary would be high enough to attract better physicians. Dr. Griscom suggested an annual salary of \$500 for each medical inspector, pointing out that the total payroll would be only slightly more than the one for the present health wardens. To make more money available, he further recommended that the duties of dock master be turned over to the street inspector, since "the latter officer has very little to do. . . . "15

The Mayor passed Griscom's recommendations on to the Board of Aldermen, which appointed a committee to look into them. Whether the proposal to eliminate over thirty political appointees and replace them with physicians chosen by an outside agency was received with astonishment, shocked horror, or merely ridicule is not clear, but in any case it received short shrift at the hands of the Board of Aldermen. The committee, after a few weeks' delay, reported to the Board: "your committee do not profess to be judges of the subject, or in other words, they do not think it proper at this time to go into such a measure."16 It scarcely needs to be said that Dr. Griscom was not reappointed City Inspector. Undismayed by the reception which greeted his proposals, on December 30, 1844, he expounded upon them in an address to the American Institute. Stirred by his appeal, a group of prominent citizens, including Peter Cooper, Mayor Harper, and others, formed a subscription to publicize Griscom's findings. Incorporating and expanding his report, in 1845 Dr. Griscom issued his famous study, The Sanitary Condition of the Laboring Population of New York.¹⁷

Granting that partisan politics rarely makes for objectivity, all descriptions of the Common Council leave little doubt that even a reformer as optimistic as Dr. Griscom could scarcely have expected much to come of his proposals. On May 29, 1843, shortly after Griscom had recommended reorganizing the city's health services, Mayor Robert Morris delivered a scathing indictment of the Common Council. This body, he declared, by means of its committees controlled all executive functions, leaving the Mayor with less authority than a chairman of a board of assistants' committee. City contracts were constantly let to firms in which aldermen and assistant aldermen held interests, and in some cases, city funds were paid directly to the councilmen themselves. Responding to the Mayor's address, a motion was introduced to establish distinct executive departments and to prohibit Council committees from exercising executive powers, but the aldermen promptly tabled it. Two years later, on May 13, 1845, Mayor William F. Havemeyer also excoriated the Common Council for the way in which the city was woefully misgoverned, and he also called upon the Council to restrict its function to policy-making and legislation. The existing system in which the Common Council handled all pat onage, contracts, and appointments, he declared, had turned the city government into one vast plundering machine. He appealed for a revision of the city's charter to provide for separate executive departments and to give the Mayor an effective veto over the Common Council. 18

Meanwhile, the City Inspector's Office, having quickly recovered from the shock of Dr. Griscom's direction, resumed its even tenor. For two years the City Inspector's reports followed the old pattern, with just a few mild suggestions about sanitary reform. In 1845 Dr. Cornelius B. Archer took over for two years, to be succeeded by a druggist, Alfred W. White. Under the leadership of these two men, the City Inspector's Office assumed a much stronger position on the city's health needs. By this time, reform was long overdue. In January of 1846 a state legislative committee was highly critical of the deplorable sanitary conditions in New York, and declared that the city's "sanatary regulations, or

their practical workings, are subject to the severest censure." Fortunately, a general reform movement in New York was gathering momentum. Under the leadership of able and energetic individuals, the New York Academy of Medicine, medical journals, and newspapers, the reform movement slowly began making headway in the sea of apathy, ignorance, and cupidity.

One of the first gains came in the area of vital statistics. Almost every City Inspector had recommended a registry of births, marriages, and deaths, but New York City and State authorities had remained strangely apathetic. Spurred on by the example of England and some American cities, public opinion gradually became more receptive. The New York Academy of Medicine, upon the motion of Dr. Griscom, seems to have taken the initiative by sending a memorial to the State Legislature in February of 1847, urging a registry law. 20 Whatever the effect of this action, on April 28 a registration act was passed. The law required the clerks of the various school districts to keep complete records of births, marriages, and deaths. The only exception was New York City, where the duty was assigned to the City Inspector. Deaths were to be reported to him within a week and births and marriages within a month. The death records were to show the name, age, residence, time, and cause of death. In New York the extra work taxed the limited facilities of the City Inspector's Office, and in June of 1847 a new clerk was added.21 The 1847 measure was a definite step forward, but collecting vital statistics requires an effective agency, a cooperative public, and strong support from all professions involved. As of 1847, none of these conditions prevailed.

With a corrupt and inefficient city administration, there was little hope for any major health reforms unless changes could be made in the city charter. The constant clash between the Mayor's Office and the Common Council, which nullified any hope for sound administration, did have the merit of throwing light upon the corrupt practices of the Common Council. Meanwhile, a minority group within the Council was trying to push through reforms, and civic-minded citizens were slowly mobilizing their political strength. As so often happened in New York City, the reformers, despairing of the ignorance and apathy of the municipal electorate, successfully appealed to the State Legislature. In April of 1849 an amendment to the city charter created three dis-

tinct executive departments, one of which was the City Inspector's Department. The heads of these departments were to be elected for three-year terms, with the exception of the Croton Aqueduct Department, whose members were to be appointed by the Mayor. Recognizing the leadership which the City Inspector's had taken in health matters, the law specified that the City Inspector's Department "shall have cognizance of all matters relative to the public health..." The advocates of this change in the city charter had hoped to separate the legislative and executive functions. Insofar as the city government was concerned, their success was very limited, but there was some improvement in health administration.

Although the new law gave wide powers to the City Inspector, it did nothing to implement them. The following January, Mayor Calch S. Woodhull pointed out to the Common Council that the City Inspector's Department, which had been given full charge of health matters, consisted of only the City Inspector, one deputy, and one permanent clerk. Such duties of the health wardens as were performed were handled by the policemen, over whom the City Inspector had no control. The health wardens, the Mayor continued, are "at present of little or no service to the publie." He proposed that an additional permanent clerk be assigned to the City Inspector's Department and that the health wardens be placed under the City Inspector's direction. These wardens, he thought, should be appointed by the Mayor on recommendation of the City Inspector or by the latter with the consent of the Board of Aldermen, Mayor Woodhull, in mentioning an old complaint about the difficulty of abating nuisances when property owners were not available, suggested applying to the Legislature for authority to recover the expense of eliminating health hazards by placing a lien upon the property involved.23

Several weeks later, the committee on ordinances of the Board of Aldermen concurred with the Mayor's recommendations and proposed further to raise the City Inspector's salary from \$1,000 to \$2,000 per year, "as they conceive the department of which he is the head, is of equal importance, and in some respects greater, than others of the city government." The two boards of the Common Council, needled somewhat by the newspapers, debated the proposals at length. Finally, at the end of March a comprehensive health law, which included strengthening the City Inspector's De-

partment, was passed. The most important provision was one which gave the City Inspector the right to appoint health wardens upon nomination by the alderman and assistant alderman in each ward.²⁴ This latter feature, which was sharply debated in the Council, weakened the provision since, under an acquiescent City Inspector, health wardens could become purely political appointees.

To many physicians, the new health administration was but little improvement over the old. Dr. D. M. Reese wrote to the State Senate on March 25, 1850, suggesting that the City Inspector's Department be replaced by a commission "composed of medical men." The general public, however, still had too much distrust of the medical profession for this proposal to be given serious consideration. Had the city government been relatively efficient or honest, the new organization for health affairs would have been a notable improvement. Unfortunately, however, the entrenched graft and political corruption soon permeated the City Inspector's Department.

The annual report which City Inspector Alfred W. White submitted to the City Council in June of 1850 gives a good picture of the operations of his department. His staff consisted of a deputy city inspector, two clerks, and 19 health wardens. The deputy was responsible for the general investigation of nuisances, and the two clerks handled all paper work-permits for burying the dead, keeping records, and preparing the weekly and yearly mortality reports. The health wardens were expected to survey systematically each building within their wards, giving its condition, the owner's name, number of stories and rooms, number of families and persons residing in it, the provision for ventilation, and any other pertinent information. If they discovered any violations of the health laws, they were to report them to the Department and notify the owners or occupants to correct the situation. Little was said in this report of the registry of births and marriages, a rather strange omission since this responsibility was clearly assigned to the City Inspector's Department by the law of 1847.26 On the face of it, with a good sanitary code and an administrative organization to enforce it, the city should have been in good shape. In reality, the City Inspector's Department was able to accomplish very little during the next few years, but its reports proved a gold mine of information. By supplying ammunition to public

health leaders in their fight to establish an effective board of health, these reports helped set the stage for a genuine reform.

In January of 1851 City Inspector White announced that 19 health wardens had been appointed and that a complete sanitary survey of New York City was under way. The newspapers generally commented favorably upon these efforts, although the editor of the New-York Medical Gazette and Journal of Health expressed some reservations. He was sure that much valuable information would be collected, but he felt that only physicians were capable of undertaking such a project. Inspector White, one of the more able occupants of his office, issued a comprehensive report at the end of 1851. In it he cited the high mortality rate for the city and declared that one-third of the deaths could have been prevented "had sanitary . . . methods been used." He then described the most flagrant violations of the health laws and appealed for quick remedial action.27 His report pointed up the chief weakness of the city's health administration. The City Inspector, if he were honest and capable and had some choice in the selection of the health wardens, could uncover a great many violations of the sanitary laws, but his office was virtually powerless to do anything about them. In almost every instance the City Inspector was compelled to seek a specific ordinance from the Common Council or else take legal action, both of which were long and involved processes.

The failure of the Act of 1850 to remove the positions of health wardens from partisan politics was clearly revealed in 1852. The Loco Foco wing of the Democrats gained control of the City Council and promptly ordered City Inspector White to discharge 15 Whig health wardens to make room for deserving Democrats. When he refused, in February the new City Council virtually gutted his Department by an ordinance which eliminated the office of deputy city inspector and turned his work over to a clerk, abolished the position of health warden, and gave control of the night scavengers to the aldermen and assistant aldermen in the various wards. Apropos of the change with respect to the night scavengers, one of the daily journals commented ironically that it presumed everybody was satisfied with "the peculiar fitness of the City Fathers for this last duty. . . ." When White's staff refused to accept the Council resolution abolishing their jobs, in

March the Council instructed the Comptroller to stop all their supplies. The discharged wardens then appealed to the courts, only to lose their case. Whatever its morality, the Common Council was probably within its legal rights. In any event, it had little cause for worry, since the trial judge was Ames Oakley. The Daily Times in 1852 mentioned that the case had come before Judge Oakley, "whose devotion to the behests of his party would deserve a statue of brass...."

On July 1 White appealed to all citizens to serve as a "voluntary Sanitary Police," since he no longer had a staff to make health inspections.28 Subsequently he called upon Mayor Kingsland, who named a policeman from each ward to handle the duties of health warden. In August the Board of Health apparently appointed its own set of health wardens, but these men remained in office for only a month or two. At the end of 1852 City Inspector Thomas K. Downing, White's successor, complained that he had no assistance save two clerks for office work.29 Farlier, Inspector White was having additional problems. On August 10 his weekly bill of mortality showed six deaths from cholera, and he appended a note stating that he could not youch for the cholera deaths, since the physicians had failed to report any eases to his office. His information, he said, had come from the death certificates.30 The running battle over the health wardens had deprived White of his inspectors and all that remained for his small staff in the summer of 1852 was to record the mortality statistics. Even this task, however, was made difficult by the refusal of physicians to cooperate. Under the circumstances, it is not surprising that White decided against running for office in the fall of 1852.

In the ensuing election, the Democrats nominated Thomas K. Downing; the Whigs supported Charles Riddle. The medical profession in New York, disgusted with the political mismanagement of health affairs and convinced that only a physician could properly serve as City Inspector, held an open meeting and nominated Dr. John H. Griscom as an independent candidate. The *Daily Tribune*, in commenting upon Griscom's candidacy, declared it would have supported him for the Whig nomination, but that to do so now would merely give aid to the Democratic candidate. Its editor added that he was not convinced, either, that a physician should hold the post of City Inspector. The Whig candidate,

Charles Riddle, whom the *Daily Tribune* was supporting, had served as deputy city inspector for three years, but his occupation was managing a porterhouse, scarcely the qualification for directing a highly responsible public health agency. The question of the merits of Riddle versus Griscom, however, was purely academic, since Thomas K. Downing, the Democratic candidate, won a decisive victory. Griscom, by far the best qualified, received fewer than 3,000 out of the 58,000 votes cast.³¹

In spite of the fears of the Daily Tribune and the medical profession, most of whom were Whigs, Downing proved to be a good official. One of his first acts was to petition the Common Council asking it to divide his Department into two bureaus, Sanitary Inspection, which would also include the inspection of food and buildings, and Records and Statistics. As presently organized, he explained, it was virtually inoperative and useless. While it had "statutory cognizance" over health matters, it had no real power. Downing expressed particular concern over the ventilation, drainage, and other sanitary problems arising from the rapidly growing number of jerry-built tenement houses. If his Department were to be given supervision over their construction, he declared, the "errors and mischief of misguided haste, and the vile promptings of pecuniary profit, would thus be despoiled of their injury and fatality-a consummation that would be hailed with universal gratification."32

The Common Council, rather surprisingly, granted all of Downing's requests. A committee of the Board of Aldermen drew up an ordinance which even went beyond what Downing had requested. The new Bureau of Sanitary Inspection, headed by a superintendent, was directed to make an annual "inspection of the sanitary condition of the city of New York. . . ." The health wardens, who were placed under the direction of the Bureau, were to inspect and eliminate any nuisances caused by putrid or unsound meat, fish, or hides, and were to have all offensive and unwholesome substances removed. The Superintendent of Sanitary Inspection was also given control over the night scavengers, including the right to dismiss or appoint them and the authority to make all necessary regulations governing their conduct. A new salary scale increased the pay of the City Inspector to \$2,500 and provided \$1,200 for the Registrar of Records and \$1,000 for the

Superintendent of Sanitary Inspection.³⁸ On April 2, 1853, the City Council formally enacted these proposals into law. During this same fleeting burst of enthusiasm for honest and efficient government, the Common Council supported a legislative amendment to the city charter which should have removed many political abuses. The amendment, passed on April 12, prohibited aldermen from sitting as judges in the local courts, prohibited giving contracts to any person who had defaulted on a previous contract or was in arrears to the city, provided that funds could not be appropriated for entertainment without a three-fourths vote of the Council, and prescribed a heavy penalty for anyone attempting to buy votes or influence municipal officials by means of money or other forms of bribery.³⁴

No one can read the succession of health and sanitary laws enacted for New York City during these years without being impressed. If legislation were enough, New York would have had a first rate public health system, and honesty would have been guaranteed among the City Fathers. The evidence scarcely bears out this felicitous picture. In August of 1853 a grand jury report indicted the filthy streets, the horrible tenements, and the failure of the Common Council to pass ordinances requested by the City Inspector, and sharply condemned the high cost of street cleaning—particularly since so little street cleaning was actually done. At the request of the grand jury, City Inspector Downing had prepared an equally damning picture of the city's sanitary conditions. After citing instance after instance of sanitary abuse and neglect, Downing summarized his position by stating that his Department was "deemed a mere office of complaint and record..." 35

Precisely how much freedom Downing had in running his department is not clear. The councilmen probably had the determining voice in selecting the health wardens, and this explains a great deal. For example, the occupations listed for the health wardens in 1853 included a baker, clerk, oyster dealer, carpenter, laborer, grocer, and liquor retailer. By more than a coincidence, Irish names predominate. In one area, vital statistics, the City Inspector seems to have been left relatively free to perform his duties. An amendment to the registry act of 1847 was passed on April 2, 1853, which strengthened the measure by specifying that the City Inspector could receive a small fee for each entry and

authorizing clergy or judges who performed marriages to charge a fee for registering the marriage. More significantly, the city was empowered to levy a \$50 fine for noncompliance with the registration law. Although the *Daily Times* declared in September that "the loose habits of the makers of certificates cause our statistics to speak very indefinitely," City Inspector Downing could rightfully speak of the new measure as one of the most fruitful accomplishments of the year.³⁷

The Registrar of Records was Dr. James S. Hyatt, and he shares credit with Downing for one of the best annual reports issued by the City Inspector's Department. For the first time there was a fairly substantial return of the city's births and marriages, with 10,157 births and 3,203 marriages being reported. The report included a brief discussion of immigration and its effect upon the morbidity and mortality rates, and a number of intelligent comments upon the general statistical picture. One of the more valuable features was a linen-backed table of mortality covering the years from 1804 to 1853. The New-York Medical Times and the New-York Journal of Medicine and the Collateral Sciences both expressed their approval. One reviewer declared that the report, "a few years since almost valueless, is now highly interesting and instructive to those interested in vital statistics." The Medical Times noted that the statistics had been collated with great care and called it "one of our most useful public documents." The report for the succeeding year, 1854, was of comparable quality. As the value of vital statistics came to be recognized, both the public and professional groups began to extend more cooperation. Almost 18,000 births and about 5,600 marriages were reported in 1854, and the report included a useful tabulation which correlated occupation with disease. Like its predecessor, this report, too, received glowing reviews in the medical journals. Even Dr. Griscom, a constant critic of the Health Department and its division of vital statistics, graciously excepted the administrators of the Department in 1854 on the grounds that although they were nontechnical men, they were performing their work with energy and efficiency.39

Downing was probably the last City Inspector to do a creditable job, and even he seems to have fallen by the wayside. During 1854 the threat of Asiatic cholera led the Board of Health to give the City Inspector's Department responsibility for cleaning the streets. Unfortunately, the street-cleaning contracts were the most lucrative form of city patronage, and they corrupted almost every official concerned. In 1855, a grand jury specifically accused City Inspector Downing and other municipal officers of accepting bribes. While no formal action was taken upon the findings of the grand jury, its work may have contributed to Downing's defeat when he ran for office against the Know-Nothing candidate, George W. Morton, in the fall of 1855. However, the Know-Nothing Party swept both the city and state elections, and Downing probably would have lost the election in any case.⁴⁰

The annual reports of Morton and his successors were fairly routine, generally following the pattern set by Downing and his predecessors. The reports deplored the appalling condition of the streets and the general filth, despite the fact that at this time the City Inspector was largely responsible for overseeing the streetcleaning contracts.41 The brief honeymoon between the medical profession and the City Inspector's Department during Downing's administration did not survive his defeat in the election of 1855. Farly the following year the New York Academy of Medicine appointed a three-man committee to draw up a memorial calling for reform of the city's health offices. The memorial declared that the health department must come under the control of registered physicians. The Daily Tribune, in strongly supporting the Academy's stand, asserted that the present health officials were "utterly unqualified except in the estimate of grogshop nominations."42

The Academy's efforts proved fruitless but its members returned to the fight in December of 1856, again petitioning for a major change. Although the Legislature paid little attention to the demands of the Academy, significant amendments were made to the city's charter during 1857. The City Inspector's position was once again made an appointive one, with the Mayor having the right to make the selection. Supervision of street cleaning and public markets was turned over to the City Inspector's Department. This latter measure led the volunteer Sanitary Association of New York City to observe grimly that it merely added "to the already grossly neglected sanitary duties of the City Inspec-

tor's Department. . . ." The *Daily Tribune* noted that the new charter did not require the Superintendent of Markets to be a butcher or dairyman, and it expressed the hope that the City Inspector would use discretion in making the appointment.⁴³

A major administrative change was made on April 15, 1857, when a state legislative act created the Metropolitan Police District, an area comprising New York, Kings, Westchester, and Richmond Counties. Among the duties of this police force were to guard the public health, "to remove nuisances existing in public streets, roads, places and highways," and to enforce all laws and ordinances relating to public health. The Health Officer was empowered to call upon the police in emergencies, although he could not ask for more than ten policemen nor their services for longer than twenty-four hours.44 Precisely how this new law affected the City Inspector's Department is not easy to determine, but it must have compounded the general confusion and overlapping of duties and responsibilities, Since Mayor Fernando Wood refused to disband the municipal force, the creation of the Metropolitan Police resulted in the existence of two police forces and set the stage for a pitched battle between them. The Street Commissioner died in the spring of 1857 and the Governor promptly appointed a Mr. Daniel D. Conover, Mayor Fernando Wood, who refused to acknowledge the legality of either the Metropolitan Police or Mr. Conover, backed a contractor, Charles Devlin, for the job. When Conover attempted to take office with the support of the Metropolitan Police, Mayor Wood mobilized the municipal police to help his candidate. After various maneuvers and confrontations, the two police forces finally clashed. "The scene," as described by a New York Times reporter, "was a terrible one; blows upon naked heads fell thick and fast, and men rolled helpless down the steps, to be leaped upon and beaten till life seemed extinct." With the help of local political hangers-on, the municipal police gained the day, and the metropolitan force retreated from the scene carrying their wounded. Fortunately, the National Guard was marching to the railway station on its way to participate in a Boston parade and was quickly called into action. The issue was settled a few days later when the state courts ruled successively that the Metropolitan Police Act was constitutional and that Conover had been legally appointed to the office of street commissioner. Mayor Wood had no choice but to disband his police force and reluctantly accept Conover.⁴⁵

While all of this may seem remote from the City Inspector's Department, the victory of the Metropolitan Police, whose duties included enforcing the health laws, weakened the authority of the City Inspector. This slight gain over their bête noire only strengthened the resolve of the New York Academy of Medicine and the Sanitary Association of the City of New York to take all health functions away from the City Inspector's Department. Another bill to this effect was introduced into the State Legislature. Although it did not pass, in the spring of 1858 the State Senate appointed a committee to investigate health affairs in New York City. Anticipating the committee's findings in view of the legitimate criticisms which he knew could be levied against his Department, City Inspector George Morton took the offensive by publishing a pamphlet entitled Remonstrance of the City Inspector, Against the Proposed Bill. . . . In it, he denied that there was any need for a change, asserting that it was absurd to require the City Inspector to have a medical degree. Appealing to popular prejudice against the medical profession, Morton declared that the proposal by the Academy of Medicine, "sufficiently illustrates the selfish purposes and empty pretensions of this contentious class of the community, who, without being able to agree upon the most simple, much less the more important truths of their profession, would fain establish by law . . . | what | would be as unjust to the rest of the community as it would be beneficial to themselves."46

He claimed that the proposed law would make it possible for the medical profession to use as many bodies as it wished for anatomical purposes and that the vaccination provisions would make the practice virtually compulsory. Noting that the Bureau of Records was already administered by an M.D., Morton stated that he thought the same service could be rendered by "any well-educated and competent clerk. . . ." The Superintendent of Sanitary Inspection, he added, was a lawyer, "a knowledge of the laws and ordinances—of the rights, powers and duties of the department and of its officers—being more necessary than of physic. . . ."⁴⁷

The testimony before the Senate Committee generally pictured

the City Inspector's Department in a quite different light. Dr. Griscom, when asked why the health laws were not enforced. blamed the existing situation upon the incompetency of the health wardens, most of whom, he declared, were cartmen or grocers who could be counted upon to run away when confronted with a case of contagious disease. Another witness, Dr. John McNulty, did not question the intentions of the employees of the Department, but he asserted that their lack of professional training made it impossible for them to do a satisfactory job. The employees of the City Inspector's Department based their defense upon the argument that conditions were not really bad and that such abuses as existed were beyond their power to correct. Richard C. Downing, the Superintendent of Sanitary Inspection, after offering a number of explanations for the deplorable sanitary conditions, concluded that the city was as clean as it could be under the circumstances. City Inspector Morton blamed the lack of action upon the City Council, asserting that his office could only make recommendations. More impressed by the glaring public nuisances and the fifthy condition of the streets than by the explanations of the City Inspector, the Committee concluded that his Department "does not accomplish the object for which it was established," and urged that all health functions be separated from it.48

While the Committee was studying the situation, the newspapers were almost unanimous in their condemnation of the City Inspector's Department. The Daily Tribune declared of the health bill that it would "replace anarchy by system, infection by purity, and pollution by cleanliness." The editor of the Daily Times wrote that "all the medical lore that has been brought to bear within the |City Inspector's| office for many years back, might be stuffed into the brains of any nervous old lady. . . ." After expatiating upon the ignorance of the health wardens, he concluded: "But who ever heard of a candidate for the Health Warden's berth being rejected because he could not tell small-pox from consumption, or a nuisance-breeding marsh from an innocent frog pond?" 49

Despite strong public support, the health bill failed in the State Legislature in the spring of 1859. By this time the City Inspector's Department was in a state of complete confusion. Acting under a

recent amendment to the city charter, Mayor Daniel Tiemann nominated Dr. S. C. Foster to replace George Morton, whose term of office had expired on December 31, 1858. The Board of Aldermen, which had been given the right to confirm the Mayor's appointees, referred the matter to a select committee, ostensibly to give it serious consideration. In reality, Mayor Tiemann had been elected by a reform group within the Democratic Party, and the old line Democrats on the Common Council had no intention of permitting this reform group to get control of any patronage. In a rather bald political statement, the select committee reported that "Dr. Foster's political associations were adverse to those of a majority of the Board," and that it had no intention of "permitting the Mayor to transfer the whole power and patronage of that important department to a party who, however friendly to him and aiding in his election, were yet hostile to the majority of the Board," When Mayor Tiemann withdrew Foster's nomination and recommended another candidate, the select committee also rejected the nominee and criticized the Mayor for not consulting with the Board of Aldermen before selecting a candidate. It had unanimously agreed upon a candidate, the select committee reported, but the Mayor had refused to accept its advice. Tiemann indignantly and rightfully accused the aldermen of attempting to usurp his prerogatives. This struggle continued for many months. Meanwhile, Morton, with the support of the City Council, maintained possession of the office.⁵⁰

The stalemate was eventually broken, and Daniel E. Delavan, a compromise candidate, was appointed to the position. While Delavan was not a physician, Leslie's Illustrated Newspaper, which had been campaigning to improve the administration of public health, described him as an efficient and upright official. It pointed out, however, that the City Inspector was compelled to appeal to the Common Council for remedial action in almost every instance, and it urged that his Department "be invested with more discretionary power. . . ." The Daily Tribune did not share this enthusiasm for Mr. Delavan. In the spring of 1860 an editorial bitterly accused him of manipulating the mortality statistics in order to make them appear more favorable. The editorial also claimed that the Department's employees had been forced to contribute to a slush fund to help defeat the proposed health bill and

that one of Delavan's clerks had played a key role in stopping the measure. After denouncing Delavan's failure to keep the streets clean, the editorial declared that his Department "is nothing more than a hospital for mendicant voters, and between the City Inspector and the Aldermen it seems likely to remain so." ⁵¹

By 1860 the City Inspector's Department had grown into a major city administrative unit with a sizable budget. Mayor Wood in his annual message on January 2, 1860, listed the duties of the Department as including all matters pertaining to public health, the cleaning of streets, supervision of public markets and all weights and measures, and responsibility for public animal pounds. The estimated departmental budget for this year amounted to \$417,500, of which \$300,000 was budgeted for cleaning streets and another \$88,500 for salaries.⁵² With over twenty health wardens and as many street inspectors, plus a host of other inspectors and clerks, the City Inspector's Department was potentially a rich source of political patronage. The most lucrative political plum in the Department came from its right to hand out the streetcleaning contracts, and, even allowing for political partisanship in the descriptions of street conditions, it is all too evident that the city got very little for its money. Moreover, while the law specified that the City Inspector's Department should have control over all matters pertaining to public health and the Department always included an item in its budget for the removal of nuisances, in December of 1850 the Board of Health was allocated another \$35,000 for the "abatement of nuisances." To complicate matters further, in 1860 the Metropolitan Police Act was amended to permit the police to cleanse or remove any nuisances in connection with the tenements. In consequence, still another budget item was instituted for this purpose.53 Thus three separate agencies were officially engaged in climinating unsanitary conditions.

Amidst the mounting uproar over the city's sanitary condition and the newspaper denunciations, it is difficult to assess the role of City Inspector Daniel E. Delavan. His annual reports insistently stressed the need for drastic reform, and his proposals in the report for 1861 had a good deal of merit. It is likely, however, that Delavan had seen the handwriting on the wall and was determined to salvage as much of his power as possible before the reformers gained control. His main proposals were embodied in a

pamphlet which he issued in 1862. He began by stating that he would normally have looked to the medical profession for suggestions but that the "chronic disagreement" among its members had caused him to seek elsewhere, "I have been compelled to deal with facts," he commented, "while more learned medical expounders have been busy with theories," The Common Council, he said, was not to blame for its failure to look after public health since the councilmen were not qualified for the task. The present cumbersome and inefficient machinery should be replaced, he declared, by enlarging the dispensaries until they could assume the functions of a health department under the direction of a new and effective Board of Health consisting largely of medical men. The role of this Board would be to determine policy while the City Inspector's Department would be responsible for administering it. Asserting that no practical suggestions had ever emanated from medical inspectors, Delavan recommended that the City Inspector be a nonprofessional individual of practicality and common sense.⁵⁴ Inasmuch as Delavan stated specifically that the City Inspector should retain all existing powers, one wonders just how much of a change would have been brought about by his proposal-particularly since the Board of Health would consist largely of medical men who, Delavan had already stated, were incapable of making practical suggestions. This latter idea was stated even more explicitly in his report for 1861, in which he wrote that long experience had taught the English to keep "unprofessional classes" in control of health matters.55

On the basis of the City Inspector's reports for the early 1860s, one would have to assume that the city's health affairs were in the hands of a group of dedicated individuals, doggedly overcoming innumerable obstacles in their quest for the city's welfare. The picture presented by other sources, however, offers a sharp contrast. The Richmond County Gazette pointed out in March of 1862 that out of the 138 members of the City Inspector's Department, there was only one who could lay "any claim to a Knowledge of medical science" and he was "a clerk without any executive functions." Among the occupations listed for the health wardens were "a speculator," "an immigrant runner," a barkeeper, and three "rumsellers." After noting that the Department had spent almost \$480,000 in the previous year, including \$325,000

for street cleaning, the editor proceeded to give a devastating picture of the atrocious conditions. He concluded by denouncing the widespread marketing of spoiled and adulterated food and beverages.⁵⁶

Although public pressure for health reform was increasing, the State Legislature again voted down a health bill in the spring of 1862. Much of the opposition to it was financed by the corrupt city administration, but part of the blame lav in the divisions among those anxious for a change. The Times and the Daily Tribune, for example, disagreed over whether the mayors of New York and Brooklyn should serve on the proposed Board of Health.⁵⁷ The machine politicians, probably emboldened by their success in blocking the health bills, appointed Francis I. A. Boole City Inspector in 1863. Boole had served for years as an alderman, and his name was an anathema to the reform group. His first annual report, issued at the close of 1863, seems to have been designed more as a campaign document than a health statement. His registrar of records and statistics, Dr. Cyrus Ramsay, commented smugly that the present health laws "are as stringent as they can well be made, and the Commissioners of Health possess almost unlimited power." Should there be any defects, he added with magnificent if unintentional irony, "we have a Common Council of intelligent men who have the first time yet to refuse to do anything calculated to promote the interests of the city in any particular." Speaking of the attempts to change the City Inspector's Department, he declared himself opposed to this harassment of public officials "by mischievous sentimentalism, fettered by the fantastic rules of a visionary system of hygiene." He praised the efforts of charitable ladies to uplift the poor, "those admirable women, who accomplish more for sanitary science, than the herd of croakers who flock to Albany, every winter, rejoicing in the euphonious appellation of 'Sanitarians,' and ringing the changes on reform."58 Boole blamed the excessive city mortality upon the large number of immigrants, the neglect of the streets by the contractor, and the draft riots during the previous summer. He agreed that the streets should be kept clean, but asserted that contrary to the Mayor's assertion "that I possess a power which no honest man should desire to exercise," he really needed more authority in order to perform his duties.59

Boole was firmly entrenched in New York politics and kept his office as alderman even after his appointment as City Inspector. In the fall of 1863 he ran for mayor, and, although losing the election, managed to retain his position as City Inspector until it was eliminated by the Metropolitan Board of Health Act in 1866. Probably motivated by his forthcoming election campaign, in the summer of 1863 he began a drive to clean the city streets and announced his intention to crack down upon the slaughterhouses, a major source of complaint. As the cleanup campaign progressed, even that constant critic, the Daily Tribune, felt compelled to pay tribute to his efforts. Boole, its editor wrote, "has grappled with his undertaking with such hearty energy and good will that we may reasonably hope for comparative miracles of purification." After praising Boole's accomplishments, the editorial concluded that the City Inspector seems "bent upon doing his whole duty, without fear, favor, or affection. . . . " A few months later, however, when Boole was running for mayor, the Daily Tribune described him as a Tammany-backed candidate of "the Ring," and commented that he had been prominent among those officials guilty of plundering the city.60

Mayor C. Godfrey Gunther, the successful candidate in the election of December, 1863, complained in his first annual message that his office was virtually powerless and could not check "the grossest irregularities, or secure an adequate protection to health, comfort, and property." Concerning the high cost of street cleaning, he asked why it was that the city could not obtain more revenue from the sale of manure. Among the other abuses, he said, was the enormous amount paid in salaries to city employees. Almost as if to underline this latter criticism, the proposed budget for the City Inspector's Department in 1864 amounted to almost \$520,000.61

Early in June of 1864 a major scandal broke out in Boole's Department. Thomas N. Carr, who had worked there briefly, charged that Boole had spent \$180,000 for the removal of ashes and garbage when private individuals had offered to do the work for nothing. He also accused Boole of padding his payroll by hiring 250 men on the eve of the election and of discharging 150 of these new appointees immediately afterward. The Citizens' Association appealed to Governor Seymour to remove Boole, but

nothing was done. In November Mayor Gunther transmitted to the Common Council copies of affidavits substantiating charges that certain offices in Boole's Department had been "put up for sale" and "purchased for sums varying from 150 to 200 dollars each." Boole dismissed the charges as vindictive. When the Mayor suspended Boole, the Common Council questioned his right to do so, and Boole remained in office. ⁶³³

Boole's annual report for 1864 clearly demonstrates the swelling power and patronage at his disposal. It showed that the Department had grown to 928 employees plus another 290 ashcart drivers. In the face of an enormous increase in street-cleaning costs and only a slight improvement in conditions, Boole asserted that he had established a token system to guarantee that contractors were paid only for the actual foads of dirt and garbage removed, "So perfect and thorough is the system adapted," Boole wrote piously, "that we venture to assert that the slightest irregularity, or the loss of a single one of these tokens, is immediately known on the day of return, and traced, without mistake, to the loser."64 Dr. Ramsay, his registrar, a windbag given to displaying his ignorance at great length, asserted in this report that it was impossible to eliminate any disease. Even compulsory vaccination had failed, he declared, for "it is a well-established fact that the same person will have a second, and even a third attack of small-pox." He conceded that it was possible by changing conditions to modify diseases, "but most of the diseases that prevail in New York will continue in some form just so long as there are people in it, and all this talk of wholly preventing this or that disease is utter nonsensical."65

The early months of 1865 brought a renewed effort to persuade the State Legislature to pass the health bill. The Senate voted in favor of the measure after an investigating committee found that employees of the City Inspector's Department had been called upon to contribute at least a month's pay toward defeating the bill. The prospects for victory appeared excellent, but, while public attention was riveted on the events at Appomattox in April of 1865, the House quietly rejected the bill, 58 to 52. Precisely how much money was necessary to prevent passage of the health bill is anyone's guess. However, in an editorial assailing Boole and his Department, the *Daily Tribune* asserted that he

had spent the enormous sum of \$812,003.85 for cleaning the streets during the previous year. At a time when "men have offered under bonds, to remove the dirt free of charge," city officials, the *Tribune* declared with righteous indignation, had preferred "to pay \$800,000 a year for not having it done at all." 88

The Tammany machine, however, was well entrenched and the indignant editorials of such journals as the Daily Tribune and the Times had little if any impact upon the great mass of its supporters. The election of Mayor John T. Hoffman, the Tammany candidate, in December of 1865 gave convincing proof that little could be done to improve the city's health unless the State Legislature could be persuaded to create an independent or semi-independent agency. The health reformers had slowly been learning the game of politics and their efforts were aided by the emergence of a group of progressive businessmen who recognized that good health was sound economics. Early in 1866 the Metropolitan Board of Health bill was pushed through the State Legislature, in the process abolishing the City Inspector's Department. The elimination of Boole and all that he represented in health administration was a major gain, but it should not obscure the fact that the City Inspector's Department had performed valuable service during its approximately sixty-year life. Its downfall came not from any intrinsic structural weakness, but from a growing tendency toward corruption and inefficiency within the city government. Had the mayors and aldermen throughout these years lived up to their responsibilities and selected able personnel, a modified City Inspector's Department might still be a part of the administrative structure.

In the years immediately before the Metropolitan Health Act, the transfer of health functions from municipal government to an independent agency was already under way. The measures giving the Metropolitan Police authority over certain phases of sanitation have already been touched upon. In April of 1864 an amendment to the Police Act directed the Police Board to establish a company of sanitary officers consisting of a captain and not more than four sergeants. The sanitary police were to inspect all ferry boats, manufacturing plants, slaughterhouses, tenements, hotels, and boarding houses, and report any conditions dangerous to life or health. The Police Board was then to institute legal action

to correct the situation. In case of filthy or unsanitary premises, the Police Board could give three days' notice. If the notice was disregarded, they were to have the premises cleaned and the charges assessed against the owner.⁶⁷

Theoretically the several hundred employees of the City Inspector's Department were engaged in precisely the same duties, but it is clear that they were accomplishing very little. The City Inspector's staff, however, could only apply to the Common Council for authority to correct unhealthy conditions, whereas the Metropolitan Police, a more or less autonomous agency, could appeal directly to the courts. The fact still remains that most of the abuses arose from the failure of the City Inspector to enforce the street-cleaning contracts and to use the very wide range of authority which his office had acquired over the years. Ironically, at a time when the City Inspector's Department was expanding at an enormous rate its functions were being assigned to other agencies.

Notes to Chapter 13

- 1. City Inspector's Report, 1826, 13, 1829, 13, 1834, 16, 1835, 15-16.
- M.C.C., 1784-1831, XIII, 740-41, XV, 76-77, 259-60; Docs. of Bd. of Aldermen and Assis., no. 81, III.
- M.C.C., 1784-1831, XVI, 729, XIX, 94, 376; New-York Medical Journal, I (1830), 436-38; hereinafter cited as N.Y. Med. Inl.
- 4. City Inspector's Report, 1837 and 1838.
- 5. Ibid., 1837, 492.
- 6. Proc. of Bd. of Aldermen, I, 90, 103, 125, II, 14, 24, III, 16.
- 7. Ibid., I, 419, 585-88; Evening Post, October 3, 1835.
- 8. Docs. of Bd. of Aldermen, no. 30, IV, 191-93.
- 9. Ibid., no. 44, III, 253-54; Docs. of Bd. of Assts., no. 1, I, 1-6.
- 10. City Election Hand Book (New York, 1844), 12.
- 11. City Inspector's Report, 1842, 158-59.
- 12. Ibid., 156-57, 160-67, 171-72.
- 13. Ibid., 173-77.
- 14. Ibid., 177-85, 188-207.
- 15. Docs. of Bd. of Aldermen, no. 111, IX, 1314-22.
- John H. Griscom, The Sanitary Condition of the Laboring Population of New York (New York, 1845), Preface.
- 17. Samuel W. Francis, Biographical Sketches of Distinguished Living New York Physicians (New York, 1867), 50-51.
- Docs. of Bd. of Aldermen, nos. 1, 6, X, pt. 1, pp. 1-10, 75-93; no. 1, XII, 19-24.
- 19. N.Y. State Assembly Document Number 60 (Albany, 1846), 41.

- New York Academy of Medicine, Minutes, February 3, 1847 (hereinafter cited as N.Y.A.M., Minutes), in New York Acad. of Med. Mss., 28-29.
- N.Y. State Laws, 70th sess., chap 152, April 28, 1847, pp. 147-48; Daily Tribune, June 22, 1847.
- Docs. of Bd. of Aldermen, no. 30, XII, 481-96; no. 28, XIII, 287-96; N.Y.
 State Laws, 72d sess., chap. 187, April 2, 1849, pp. 281-83.
- 23. Does of Bd. of Aldermen, no. 1, XVII, pt. 1, pp. 15-17.
- 24. Ibid., no. 16, pp. 299-302; Daily Tribune, March 18, 22, 23, 1850.
- 25. New York State Senate Document Number 92 (Albany, 1850), 10.
- 26. Docs. of Bd. of Aldermen, no. 43, XVII, pt. 2, pp. 761-62.
- Daily Tribune, January 9, 1851; N.-Y. Med. Gaz. & Jul. of Health, II (1851), 13; City Inspector's Report, 1851, 352-454.
- 28. Daily Tribune, February 5, March 24, 30, June 19, July 1, 8, 1852; Daily Times, August 5, 1852.
- Daily Times, August 18, September 9, November 12, 1852; City Inspector's Report, 1852, 285–86.
- 30. Daily Tribune, August 10, 1852; Daily Times, August 10, 17, 1852.
- 31. Daily Tribune, October 8, 25, 29, November 6, 1852.
- 32. City Inspector's Report, 1852, 285-93.
- 33. Docs. of Bd. of Aldermen, no. 10, XX, pt. 1, pp. 323-38.
- 34. Ibid., no. 24, pp. 512-19.
- 35. Daily Tribune, August 9, 1853.
- 36. Valentine's Manual, 1854, 69.
- 37. Daily Times, September 5, 1853; City Inspector's Report, 1853, 185.
- City Inspector's Report, 1853; N.-Y. Int. of Med. & Coll. Sci., new series, XIII (1854), 419-20; New-York Medical Times, III (1854), 418 (hereinafter cited as N.-Y. Med. Times).
- 39. N.-Y. Inl. of Med. & Coll. Sci., new series, XV (1855), 401-07; John H. Griscom, Anniversary Discourse before the New York Academy of Medicine, November 22, 1854 (New York, 1854) [N.Y.A.M. pamphlet collection].
- City Inspector's Report, 1854, 246; Daily Tribune, September 25, October 23, November 10, 1855.
- 41. See City Inspector's Reports, 1856–1865.
- 42. N.-Y. Med. Times, V (1856), 203-04; Daily Tribune, February 15, 1856.
- 43. Daily Times, December 13, 1856; Report of the Sanitary Association of the City of New York in Relation to the Public Health (New York, 1859) [N.Y. Public Library pamphlet collection]; Daily Tribune, May 1, 1867.
- 44. N.Y. State Laws, 80th sess., chap. 569, April 15, 1857, II, 200-19.
- 45. Daily Times, June 15-18, 30, July 3, 9, 20, 1857.
- 46. Remonstrance of the City Inspector, Against the Proposed Bill entitled An Act to Improve the Public Health and Establish a Sanitary Police in the City of New York (New York, 1858) [N.-Y. Hist. Soc. pamphlet collection], 11.
- 47. Ibid., 14-15.

14

The Health Office: Chief Quarantine Agency

Unlike the City Inspector's Office and the Board of Health, the third administrative unit concerned with city health matters, the Health Office, was a semi-independent agency whose officials were appointed by the state. The duties and perquisites of its three chief officers, the Resident Physician, the Health Officer, and the Health Commissioner have already been touched upon in a previous chapter. Suffice it to say that the fees which these officials were permitted to collect provided them with a lucrative income, while at the same time their control over all shipping offered unscrupulous office-holders even greater opportunities for graft. Fortunately for New York City, forcing vessels to unload their cargoes and undergo the contemporary cleansing procedures presented more opportunities for enriching the officials than simply permitting them to land. In consequence, the enforcement of the quarantine laws, for its day, was relatively effective.

Although intelligent merchants generally supported the quarantine laws, there were few businessmen who did not protest when the laws bore heavily upon their own vessels or cargoes, and there was constant pressure upon the city and state to modify the regulations. In 1825, for example, an amendment passed by the State Legislature exempted vessels arriving from Canton and Calcutta from the general quarantine restrictions applied to vessels coming from Asia.² Precisely why these cities should have been exempt is difficult to say, unless a local interest group had pushed through the amendment for its own self-interest.

The relatively large income of the Health Office inevitably drew the attention of the Legislature. In 1826 an act was passed which provided that all surplus funds in the hands of the health commissioners at the end of the fiscal year be turned over to the

- 48. Report of the Select Committee appointed to investigate the Health Department of the City of New York . . . February 3, 1859 (Albany, 1859).
- 49. Daily Tribune, April 1, 1858; Times, July 7, 1858.
- Does, of Bd. of Aldermen, no. 21, XXVI, pt. 1, pp. 1-23; Daily Tribune, March 18, 1859.
- Frank Leslie's Illustrated Newspaper, September 3, 1859, August 25, 1860;
 Daily Tribune, May 14, 1860.
- 52. Times (Supplement), January 4, 1860; Does. of Bd. of Aldermen, no. 34, XXVI, pt. 2, p. 9.
- 53. Docs. of Bd. of Aldermen, no. 34, XXVI, pt. 2, p. 23; no. 17, XXIX, 93.
- 54. Communication of the City Inspector, Daniel E. Delavan, to the Commissioners to Amend Charter, Relative to the Reorganization of the Health Department of the City of New York (New York, 1861).
- 55. City Inspector's Report, 1861, 45.
- 56. Richmond County Gazette (Supplement), March 29, 1862.
- 57. Times, April 14, 16, 21, 1862; Daily Tribune, April 18, 24, 1862.
- 58. City Inspector's Report, 1863, 166, 346-47.
- 59. Ibid., 7-8, 11-12.
- 60. Daily Tribune, September 10, November 24, 1863.
- 61. Docs. of Bd. of Aldermen, no. 1. XXXI, pt. 1, pp. 4, 15, 19; no. 6, pp. 9-10.
- Speech of Thomas N. Carr, in Support of Charges Against Francis I. A. Boole, City Inspector, before his Excellency Horatio Seymour, June 3, 1864 (New York, 1864).
- 63. Stokes, Iconography, V, 1912 14.
- 64. City Inspector's Report, 1864, 144-45, 148-49.
- 65. Ibid., 511.
- 66. Times, April 1, 14, 1865; Daily Tribune, May 27, 1865.
- 67. N.Y. State Laws, 87th sess., chap. 403, April 25, 1864, pp. 927-29.

Society for the Reformation of Juvenile Delinquents. This law evidently proved a windfall for the Society, for three years later, in 1829, a second measure limited the amount it would receive annually to \$8,000. The law further directed the health commissioners to transfer the rest of the surplus to the Comptroller, who was to retain the funds in a separate account known as the "Mariner's Fund."³

Meanwhile, a growing number of complaints were voiced against the stringency and, in some cases, inconsistency of the quarantine laws. One correspondent, who signed himself "A MERCHANT," objected to regulations which permitted some vessels to dock in New York City without performing quarantine while absolutely prohibiting others from landing, even after they had submitted to it.

Another merchant claimed that no other city in the country placed as many obstacles to commerce during the summer months as New York. He pointed out that a ship reporting a death from consumption was obliged to spend at least a month in quarantine, although it may have come from a healthy port and had no other sick aboard. And he was shocked to find that goods such as rum, tobacco, and pimento, "which are preventives of disease," were often excluded from the city. Earlier in the year the Board of Health had proposed to the Common Council that the quarantine regulations be modified. Further impetus was given to the movement to ease the laws when the newspapers began a concerted drive against the quarantine system. Bowing to public opinion, the Common Council appointed a committee of five to collaborate with the Chamber of Commerce in rewriting the quarantine law.4 With city officials and leading citizens exhibiting an unusual degree of unanimity, the Legislature promptly revised the regulations.

The new measure, enacted in September of 1827, first specified that the quarantine anchorage ground was to be located adjacent to the Marine Hospital on Staten Island, and then listed the classes of vessels which would be subject to quarantine. The first class included all ships arriving between April 1 and November 1 which carried forty or more persons, or else reported sickness aboard. In the second category were vessels arriving between May 31 and October 16 which had passed south of Cape Henlopen, Delaware.

The third class of ships were those entering New York waters between April 1 and November 1 from Asia, Africa, the Mediterranean, and the West Indies, or which had passed south of Georgia enroute to New York. The fourth group included vessels arriving between April 1 and November 1 from a port where any type of bilious, malignant, or pestilential fever was present, or on board of which a case of such a fever had occurred. A final class consisted of vessels which would normally have fallen in the fourth class but which had stopped at some other American port before proceeding to New York.

The most significant change in the new quarantine law was a provision which made for greater flexibility by giving more discretion to the Health Officer. For example, he was to have sole responsibility for determining the quarantine restrictions applied to vessels in the first two categories. Vessels in the third class were required to spend only two days in quarantine, although the Health Officer was given the authority to extend this period of time. Ships from Canton and Calcutta, however, were excluded from that requirement unless they had stopped enroute in the West Indies or Central America. The fourth class of vessels, those coming from ports where pestilential fever existed, were required to remain thirty days in quarantine, at least twenty of which had to be after the cargo had been unloaded. The question of what to do with vessels not falling into any of the categories described by the law was left to the discretion of the Health Officer. A final safety clause empowered the Mayor and Commissioners of Health of the City of New York to order any ship away from its wharves if "the public health shall require it...."5

The new law, by giving more power and responsibility to the Health Office, undoubtedly achieved greater flexibility, but it also opened the door to mismanagement and corruption. In the spring of 1828 a New York newspaper bitterly criticized the newly appointed Commissioners of Health. Noting that Dr. James R. Manley, who had been nominated as resident physician, did not believe yellow fever to be an imported disease, the New York American asserted that it was absurd to appoint as administrator, "a person who does not believe in the danger against which [the laws] are intended to guard. . . ." Subsequently a correspondent to the

American claimed that Dr. C. C. Yates, the nominee for health officer, held views similar to those of Dr. Manley.⁶

In July one of the local merchants, George Wotherspoon, charged the health commissioners with favoritism. Those merchants well known to the commissioners, he said, were quickly given clearance, while others were forced into costly delays. In response, both Dr. Manley and Smith Cutter, the Commissioner of Health, publicly denied the charges. From the ensuing exchange of letters, it is clear that Dr. Harrison, the previous health officer, had refused to allow two shipments of cotton to be brought into the city from the quarantine grounds. Manley and Cutter, however, had overruled Harrison and authorized one of the shipments to be released.7 The two health officers were undoubtedly guilty of playing favorites in this instance, and the likelihood is that graft or political favors were involved. This likelihood seems all the greater in light of the fact that Cutter later was forced to repay the state almost \$14,000 which he had admitted to embezzling during his term as Commissioner of Health. Concerning this latter statement. as early as 1829 a newspaper correspondent urged that the health commissioners be required to keep strict financial accounts of all fees received. Unfortunately, this advice was not taken.

As memories of vellow fever receded, the pressure to relax the quarantine laws steadily increased. The major objective of the anti-quarantine faction was to give the Health Officer greater discretion in releasing ships and cargoes. A committee of the Common Council in February of 1829 recommended that more responsibility be given to the Health Officer or the Board of Commissioners of Health, which it designated as the Resident Physician, the Health Commissioner, and the Mayor. On the face of it, the committee's proposal was designed to strengthen the Health Officer's position, but its real effect would have been to weaken his authority, since one clause would have permitted the Commissioners of Health to overrule his decisions. After considerable public debate, an amendment to the quarantine law in 1830 increased the Health Officer's discretionary power, but the proposal to permit the other commissioners to constitute a board of appeal was rejected.9 The following year still another amendment further eased restrictions on vessels coming from the West Indies. In 1830 the opponents of quarantine won a major victory when an act was passed which designated the Mayor, Resident Physician, and Health Commissioner as a board of appeal to review decisions made by the Health Officer.¹⁰ By this time the whole quarantine system had become so involved in patronage that the net effect of this change was simply to help distribute the political spoils.

The correspondence of Dr. Peter Townsend provides an interesting glimpse into the murky world of state politics during this period. Dr. Townsend appealed to John Townsend, a relative, asking for his help in securing the post of health officer. Although the backers of a rival candidate had made large financial contributions to the Whig Party, he wrote, "you can command 1000 votes, Onondaga, Albany, Troy & Orange Counties included." In this same letter he spoke of the position as "the richest office almost in the gift of our state." Evidently the Townsend clan did not control enough votes, for the job went to Dr. Sidney Doane, whose friends, presumably, had been of greater service to the Whig Party. In reporting the names of the newly appointed health commissioners, the editor of the New-York Journal of Medicine and Surgery dismissed the subject with the comment: "These appointments are all political." 12

As mentioned earlier, the salaries and fees allowed the health commissioners provided them with relatively large incomes, and the offices provided even greater opportunities for the unscrupulous. Aside from the acceptance of bribes, these officials handled relatively large sums of money in a day and age when record keeping was notoriously lax. Rumors of misappropriation in 1840 may have been responsible for two amendments to the law establishing the health office. The first raised the bond required of the health commissioners from \$5,000 to \$20,000; the second authorized the Governor to appoint five commissioners "to supervise the expenditure of money collected and received by the health commissioner, resident physicians, and health officer of the quarantine establishment. . . . "13 Theoretically the latter amendment should have ensured a reasonable degree of honesty, but in practice it accomplished nothing. A special committee appointed by the Board of Aldermen to inquire into the finances of the Health Office reported in March of 1843 that no records had been kept from 1837 to 1842. Health Commissioner James H. Hart was specifically charged with malfeasance in office and a number of other officials were accused of making fraudulent returns. The committee placed the responsibility for this disgraceful situation upon the administrative failure of the Mayor rather than upon any inadequacy in the laws. Since every crewman and passenger entering the port was required to pay to the Health Commissioner a head tax varying from fifty cents to two dollars, the successive health officers were in a fine position to become independently wealthy. The committee's investigation showed, for example, that the Health Commissioner had failed to record the fees collected from over 5,000 immigrants in the year 1838 alone.¹⁴

Apparently legal proceedings were started against Health Commissioner Hart and his predecessor, Smith Cutter. Since it required considerable influence to obtain the position of health officer, this same influence could prove equally valuable when an office-holder got into trouble. Cutter's friends were able to push a bill through the Legislature relieving him of all responsibility, provided he repaid the state treasury the sum of \$13,830.25 plus all costs of the legal action against him.15 The lesson was clear to all state officeholders: anyone caught embezzling the state's money might be required to repay part of it. Although periodic efforts were made to reform the Health Office, little basic change was made in the system. In March of 1849 the Daily Tribune urged that the Health Officer be placed on salary. "The sooner the old system of perquisites and fees, pickings and stealings, is thoroughly dispensed with, the better," its editor declared.16 By this time, however, sick and famished Irish refugees from the great famine were pouring into New York, presenting more immediate problems.

In 1845, on the eve of the mass Irish immigration, another legislative committee was appointed to look into the quarantine system. After hearing testimony from physicians, public officials, and businessmen, the committee recommended that the Health Officer be given still more discretion with respect to the duration of the quarantine period. It suggested that the quarantine law be applied to ships having smallpox aboard, noting that the disease usually entered the city during the winter months when the quarantine laws were not in effect. Probably in response to pressure from commercial interests, the committee further suggested that the Chamber of Commerce be given the right to nominate a commer-

cial physician who should join with the Mayor and Resident Physician to form a board of appeal to review decisions of the Health Officer.

The legislative committee then turned to an old financial problem which was becoming more acute as the tide of immigration rose. The Health Officer, as previously mentioned, collected a head tax or fee from every person entering the port. This head tax was intended to support the Marine Hospital, which was to admit both scamen and immigrants. The health inspection of immigrants was at best casual, and often acute symptoms did not develop until shortly after the passengers had landed. Since many of them arrived virtually destitute, the sick frequently ended up in Bellevue or one of the other municipal institutions. The head tax provided ample funds for their care, but the Health Officer took the position that immigrants, once landed, were no longer his responsibility. The legislative committee noted that the money collected by the Health Officer was being diverted to charitable and other agencies having nothing to do with immigrants. As a remedy, it proposed that the Marine Hospital be open to any sick immigrant for one year after payment of the head tax. 17 The committee mentioned in its report that there were three hospitals available on the quarantine grounds: a smallpox hospital which could accommodate 50 persons, a vellow fever hospital which could handle 400 patients, and a general hospital with 400 beds. Going beyond its province, the committee struck at city officials by declaring that New York was "more filthy than any port in the West Indies." A few tentative steps had been taken by the authorities to improve the city's sanitary condition, but, the committee declared, "what has been actually done, has been far behind the absolute wants, the absolute demands, of humanity."18

In commenting upon the report of the legislative committee, the editor of the New-York Journal of Medicine and the Collateral Sciences expressed his approbation over the new procedure which had been established for landing immigrants. He was glad to see the climination of "the burdensome, barbarous, and unreasonable practice of compelling all emigrants, from whatever port they may arrive, to be landed at the quarantine, there to be huddled together like flocks of sheep, exposed to the night air, or to the storms and hot sun of the season. . . ." He pointed out that

one of the current practices of the Health Office was to permit ships which were considered potential sources of disease, presumably too dangerous for New York, to be unloaded in Brooklyn, despite the proximity of the two cities and the fact that many of the stevedores on the Brooklyn docks returned each night to their homes in New York.¹⁹

The misuse of the head tax money was only one aspect of the immigrant problem. Dating back to 1824, ship captains or owners of vessels were required to post bond for all passengers landing in New York, in order to guarantee that these individuals would not become charges of the city. Gradually a class of immigrant brokers arose in the city who for a fee assumed responsibility from the ship captains. If any immigrant became sick after his arrival, theoretically the bondsman was responsible for his care. Rather than pay the relatively nominal hospital costs at Bellevue or the Almshouse, the bondsmen began establishing their own hospitals. Reluctant to spend any of their exorbitant profits, they provided only an absolute minimum of food and care. So notorious were these institutions that sick immigrants desperately tried to keep out of them by gaining entrance to Bellevue or one of the city hospitals—and conditions at these latter were scarcely ideal. In 1847 the Legislature created a six-man board of emigration to care for the new arrivals. In lieu of a bond for each passenger, ship captains were permitted to pay a one dollar commutation fee directly to the Health Commissioner. This money was made available to the Commissioners of Emigration, who were to assume responsibility for immigrants until they had been in the United States for five years. To facilitate their work, the Commissioners of Emigration were given control over the Marine Hospital.²⁰

In 1846 and 1847, while the Legislature was still debating what to do about the immigrants, sick and impoverished Irish were pouring into the city. Within a short time the hospitals at the Quarantine Station and all city institutions were literally swamped. Although the three quarantine hospitals had only 850 beds, during one nine-month period the admissions totaled 7,000. The operation of the Quarantine Station had never been too effective, and the health officials were ill prepared to cope with the events of 1846–1847. To add to their difficulties, the act creating the Commissioners of Emigration, instead of improving conditions, merely wors-

ened them by dividing responsibility. A committee of the State Assembly investigating the Quarantine Station in 1848 pointed out that theoretically the Health Officer's sole responsibility was that of treating the inmates in the quarantine hospitals. Unfortunately, the report noted, constant disputes were arising between the health and emigration commissioners as to which immigrants should be quarantined, which admitted to the hospitals, and so forth. The sheer mass of impoverished immigrants made the whole establishment look more like a pauper station than a quarantine ground.²¹

The committee absolved from blame both the commissioners of health and of emigration, stating that the problem lay in the confused and vague wording of the law. It proposed the enactment of a new measure specifically defining the duties of the two agencies. The committee also took up the matter of the location of the Quarantine Station on Staten Island. When originally selected, the area had been sparsely settled, but over the years the population had grown. Since the word "quarantine" was associated with epidemic disease, neighboring residents soon began to demand that the station be removed. Over and above this local pressure, the proximity of the quarantine grounds to New York made it virtually impossible to keep the friends and relatives of quarantined immigrants from flocking to visit them. The committee agreed that the station should be moved and suggested Sandy Hook, New Jersey, as a good alternative.²²

The reappearance of Asiatic cholera at this time had aroused much public concern and greatly increased the general apprehension rising from the proximity of the Quarantine Station to the city.²⁸ Shortly after receiving its committee report, the Legislature authorized the Commissioners of the Land Office to investigate Sandy Hook, and, if they considered the site suitable, to negotiate with the representatives of New Jersey for its purchase.²⁴ Partly because the residents of Sandy Hook were as reluctant to have a quarantine station as those on Staten Island, negotiations dragged on for some years before New York finally gave up and selected another location.

On April 11, 1849, a day after authorizing negotiation for Sandy Hook, the Legislature sought to implement the other recommendations of its committee by passing a new immigration law. The new act required captains to give complete information to the

Mayor's Office on all passengers landed. The commutation fee in lieu of making bond was raised to \$1.50 per passenger. The Commissioners of Emigration were instructed to examine all passengers and to require an additional bond for those who might become public charges. The Health Commissioner continued to be responsible for collecting the commutation fee, but he was required to account daily for all money received. Moreover, he was no longer allowed to collect a fee or percentage for his work, but was to receive a salary of \$2,000 per year and was to be bonded to the extent of \$10,000. The law specified that the Commissioners of Emigration were to have exclusive control over the Marine Hospital, "except in regard to the sanitary treatment of the inmates thereof. . . ." While the emigration commissioners were authorized to appoint a superintendent and other maintenance employces, medical care in the hospital was to be administered by a physician and four assistants chosen by the Governor. The hospital physician was to have complete authority over all medical matters. To eliminate any uncertainty, clause fourteen in the act specifically denied the Health Officer any power over the Marine Hospital except insofar as it was given to him by the act-and all that the measure stated with reference to the Health Officer was that no patient recovering from a contagious disease could be discharged from the quarantine hospitals without his consent.25

This law, in conjunction with the earlier one establishing the Commissioners of Emigration, did much to undermine the authority of the Health Office. The process was carried one step further a year later when the Health Office, with its three commissioners, to all intents and purposes disappeared as a separate agency. The three health commissioners had originally been appointed by the Governor, but in the spring of 1850 the New York City Board of Health law was completely revised. Under the terms of the new law, the Health Commissioner and Resident Physician henceforth were to be appointed by the Mayor with the approval of the Board of Aldermen. The Mayor was also authorized to appoint an inspector of vessels to check on all incoming ships and, wherever necessary, supervise their cleansing and purification. The Health Officer, who remained a state appointee, continued in charge of the quarantine regulations. No basic change was made in the quarantine laws, although they were restated in

a somewhat simplified form. The strictest quarantine regulations still applied to vessels coming from the endemic yellow fever areas during the warm months. In all other cases the Health Officer was given considerable leeway. To combat the rising incidence of smallpox, he was empowered to order a general vaccination of all persons aboard ships where smallpox was present. Consistent with its aim of returning the responsibility for public health to city officials, the new law reiterated the provision in the 1839 law giving the Mayor and Commissioners of Health the right to overrule the decisions of the Health Officer.²⁶

For over fifty years the Health Office had been a state agency charged with the major responsibility for enforcing the relatively strict quarantine laws. With the passing of the 1850 Health Act, the last in a series of laws which had steadily whittled away at the Health Office, only the Health Officer remained an appointee of the state, the strict quarantine laws of earlier years had been modified, and the real control over quarantine administration had been placed in the hands of the municipal authorities. Under normal circumstances, returning the management of the Port of New York to municipal officials would have been a commendable step and one well within the concept of local self-government. Unfortunately, it came at a time when mismanagement and corruption in the City Hall was moving toward an all-time high, and the net effect was to convince health reformers of the need to remove health administration completely out of the jurisdiction of the City Council.

Although the threat of Asiatic cholera during these years helped to convince the public of the need for preserving most of the quarantine regulations, there was a growing feeling, particularly among the members of the medical profession, that the disease was largely generated in dirt and filth. In 1851 the editor of the New-York Medical Gazette and Journal of Health urged the appointment of a medical commission to investigate the city's health and sanitary conditions as a prelude to undertaking the necessary program requisite for eliminating cholera. He condemned as futile the "absurd reliance upon quarantines, irrationally and unphilosophically enforced" which had characterized the actions of state and municipal officials.

The Health Officer's ineffective enforcement of the quarantine,

the editor charged, was responsible for the repeated introduction of smallpox and typhus. In March of 1851, he declared, smallpox had entered the city through "the criminal remissness of the Health Officer. . . ."²⁷ To substantiate his viewpoint, in May he gleefully published a report by Dr. F. Campbell Stewart, superintendent and physician of the Marine Hospital, in which Stewart declared that the quarantine was virtually useless with respect to ships carrying smallpox or typhus. In the case of smallpox, Stewart asserted, vessels were "often permitted to proceed to the city after a few hours or one or two days detention only, and without the clothing being washed!!!" All that the quarantine laws did, he concluded, was to give the public "a false impression of security" and benefit the Health Officer, "an active politician," to the tune of \$27,000 a year. 28

Stewart's outspoken comments brought down the wrath of the politicians on his head. Shortly thereafter, he was relieved of his job as superintendent of the Marine Hospital but managed to hang onto his position as physician. Undaunted, Stewart then publicly charged Health Officer A. Sidney Doane with showing favoritism toward vessels owned by M. H. Grinnell, a local merchant, by permitting them to pass improperly through the quarantine. In the exchange of public letters between the three principals, Stewart more than held his own.²⁹ If Doane was guilty, retribution came fast. In the fall of 1851 he fell into the hold of a ship and suffered fairly serious injuries. No sooner had he recovered when, in January of 1852, he contracted typhus while examining immigrants on board the ship "Great Western" and died before the end of the month.³⁰

Continuing the steady trend toward reducing the stringency of the quarantine laws, another amendment in 1852 exempted all vessels and persons engaged in coastal trading between Virginia and New York, except when contagious diseases were present.³¹ Meanwhile, negotiations were still under way with New Jersey over the use of Sandy Hook as a quarantine site. In 1852 and 1853, the New York Senate passed resolutions asking the Land Office Commissioners for information about their progress, but they could only report that New Jersey was reluctant to come to a decision.³² The casual medical inspection of new arrivals at this time proved no barrier to the importation of typhus during the high

tide of Irish iramigration, and immigrant stations in New York City soon became focal points of infection. In February of 1852 the Common Council requested that the Board of Health take measures to prevent the disease from spreading in the Fifth Ward. The Board then appealed to the Commissioners of Emigration to move the Canal Street immigrant depot. The immigration officials conceded that the depot was a threat to health and agreed to look for new quarters.³³ In justice to the quarantine officers, it should be pointed out that without a knowledge of the role played by lice it would have been difficult to exclude typhus. Yet an adequate period of quarantine and the requirement that all clothing be properly cleaned would have greatly reduced the problem—and these measures were required by law in the 1850s.

For the next few years minimal changes were made in the quarantine system. Periodically the Health Commissioner was charged with lax enforcement of the regulations and occasional derogatory comments were made about the political implications of his position. For example, in July of 1852 one of the newspapers charged that 17 passengers had been taken off a ship which had been sent to the quarantine ground because of Asiatic cholera. The following spring the grand jury indicted a ship captain for passing the quarantine station without permitting the Health Officer to inspect the ship. After declaring that this was the first case of its kind in many years, the Daily Times hailed the action of the grand jury.34 At this same time, a medical journalist in speaking of the "snug berths" of the Resident Physician and the Health Commissioner. added that a higher prize, the post of Health Officer, was "in the market," and since "its perquisites are said to be worth thirty to forty thousand dollars per annum, a number of competitors are running for it with all their speed." Two years later one of the newspapers complained about the Governor's appointing an upstate physician to the position of Health Officer. After asserting that the appointee should have been a local physician familiar with the city's health problems, the editorialist scathingly denounced the use of the position of Health Officer as a political plum and called for a complete reform of the quarantine administration. 35

Constant agitation for the removal of the quarantine station from Staten Island marked these years and was reflected in numerous editorials and letters to the editor. The Daily Tribune,

which strongly advocated the change, blamed New Jersey for its refusal to agree to the sale of Sandy Hook. A long editorial in the Daily Times in March of 1855 discussed all of the proposed locations and found none of them suitable. Sandy Hook was simply called unfit; a 28-acre site at Gravesend was too expensive; a proposed floating quarantine above Concy Island was considered unsafe; and a suggestion that Robbin's Reef be used had been turned down because of a decision to use the land for residential purposes.36 Events in the summers of 1855 and 1856, however, greatly strengthened the position of those fighting to remove the quarantine ground. Late in July of 1855 yellow fever was reported in certain Virginia ports and Asiatic cholera in Portland, Maine, and Middletown, Connecticut. Since some of the infected Virginia ports did not ordinarily come under the quarantine regulations, Acting Mayor Isaac O. Barker issued a special proclamation on July 30 requiring all vessels from these areas to perform quarantine. Subsequently the quarantine was applied to ships coming from Baltimore and all ports to the south.³⁷ Apparently these measures proved effective, for New York remained clear of the infection.

The following spring three contagious diseases threatened the city. On May 2 it was reported that one vessel in quarantine had buried 14 men at sea, most of them dying from measles, another had lost its captain to yellow fever, and a third had 20 cases of smallpox among its passengers. Keeping ships, crews, and passengers isolated in quarantine was a difficult problem at best, and one which caused a great deal of irritation, but it was complicated even more by the dilapidated condition of the customs houses. Early in the year the Legislature had sent a joint resolution to its congressional representatives urging a federal appropriation to repair or rebuild them. In July shipowners complained to the Board of Health that the United States wharf was unfit for eargo storage, but the Board insisted that it would enforce the regulations requiring that the cargoes be ventilated.³⁸

The continuing friction between the Staten Islanders and the quarantine officials reached a new peak in May when the Health Officer arrested two men for visiting a ship quarantined because of smallpox. Subsequently a dozen or so of their friends climbed over the wall of the Quarantine Station and rescued them. A grand

jury indicted those involved in the escapade but the legal proceedings merely added to the bitterness. Meanwhile, as more incoming vessels arrived with cases of yellow fever aboard, a general tightening of the quarantine system took place. The health commissioners met daily, and on July 18 almost the entire body of civic officials, including the Board of Health, Commissioners of Emigration, City Comptroller, Common Council, and the Mayor of Brooklyn, made an official visit to the Quarantine Station. Although the grounds and hospitals were found in satisfactory condition, it was decided to appoint a special assistant physician to help out at the station.³⁹

By August 7 rumors of yellow fever began to spread through New York, Dr. Elisha Harris, the quarantine physician, reported a number of cases to the Commissioners of Emigration, Reluctant to arouse what they felt was needless alarm, the commissioners decided not to publish Harris' report. During the discussion, however, some of the commissioners had maintained, probably correctly, that suppressing the report would cause more alarm than its publication. The following day a meeting was called by some Castleton residents to protest the presence of yellow fever cases in the adjacent quarantine hospitals. The fears of the Staten Islanders were not without justification. Almost 120 ships, many of them from vellow fever ports, were anchored in the quarantine grounds. Often passengers and crews, after a cursory health inspection, passed through the gates of the quarantine station and continued their journey to New York City via some of the small towns on Staten Island. In this way individuals with undiagnosed cases of yellow fever found their way into Tompkinsville and other neighboring communities. Outraged by what they considered the negligence of the health officials, the Tompkinsville residents organized a vigilance committee to prevent anyone from leaving the grounds and threatened to barricade the gate in the event more cases of yellow fever were found in the village. They also requested the Health Office to provide a "constabulary" to prevent communication between infected vessels and the shore. The health officials, however, declared that this was beyond their responsibility.40

The actions of the inhabitants of Tompkinsville were paralleled by those of Castleton. On August 7 the Castleton Board of Health adopted a series of regulations respecting the quarantine ground, the first of which proposed to isolate the village completely from all contact with the quarantine ground. Another regulation strictly prohibited crewmen from throwing overboard infected bedding, clothing, or other articles which might drift ashore near Castleton. The next step was to appoint watchmen to prevent anyone from leaving the quarantine grounds and to check the beaches for any bedding or other articles which might have drifted ashore. To make their isolation policy completely effective, the Castleton officials then decided to barricade the quarantine gate. On August 10 several men attempted to climb over the quarantine walls but were prevented from escaping by the Castleton guards. One of the New York newspapers commented with asperity that these men were New York citizens attempting to return home and that the Castleton Board of Health had no jurisdiction over them. The Castleton guards, it pointed out, could prevent them from entering the village or using the ferry, but they had no authority to prevent any travel between the Quarantine Station and the city.41

Health Officer Thompson found himself beset on all sides during these trying days. He wrote to the Commissioners of Emigration on August 11 that he was taking all possible measures to safeguard the city. He had attempted to isolate workers on infected vessels and was using only Staten Island stevedores to lessen the danger of New York workers carrying the disease back to the city. Although some of the local authorities had cooperated with him, those in Castleton, Thompson wrote, had done nothing but make trouble. The Castleton Board of Health indignantly replied that it had sought the cooperation of the quarantine officials and had employed its own guards and barricaded the gate only when it became clear that the quarantine officials were not maintaining a rigid quarantine.⁴²

While Staten Islanders were complaining that Thompson's enforcement of the quarantine regulations was too lax, he was under criticism from merchants and shipowners for being too zealous. At the same time, the captains and crews of vessels detained in quarantine were usually quite bitter over the restrictions placed upon them. On August 10 Thompson returned to the Quarantine Station to find a crowd of about 200 men, composed of ship captains, seamen, and stevedores, preparing to tear down the Castleton barricade. He was able to dissuade them at this time, but three

days later they reassembled and demolished it. A spokesman for the group was quoted as saving that the men would submit to state sanitary regulations but not to those of the local authorities. He claimed that the local quarantine served merely to exclude New York tradesmen and enable "the speculators of Richmond County" to charge exorbitant prices for food. Probably because their action was of doubtful legality, the Castleton authorities made no attempt to restore the barricade. At this time, Dr. Thompson was holding about 120 vessels at the Quarantine Station, and another 15 with vellow fever cases on board at Gravesend. Reflecting the criticism to which he was subjected from both sides, he was accused of a "capricious exercise of authority" for detaining so many vessels in the quarantine ground and of endangering the safety of the inhabitants of King's County by anchoring infected ships in Gravesend Bay. This latter complaint was voiced by a delegation which appeared before the health commissioners. Conceding the validity of their contention, the commissioners voted to remove the vessels to "the vicinity of the South West Spit" and to provide three competent pilots for the job. 43

This action, unfortunately, came too late, for yellow fever had already gained a foothold on the adjacent shore. The disease did not immediately flare up, and almost two weeks elapsed before it became apparent that an epidemic had developed. During this time the New York newspapers kept reassuring their readers, quite correctly it turned out insofar as Manhattan was concerned, that there was no occasion for alarm. On August 14 Dr. Thompson reported that only 14 cases of yellow fever were under treatment in the Ouarantine Station. Four days later the Daily Times declared that there was no sickness of any significance other than cholera infantum, a common summer disorder. The paper admitted, however, that there was some alarm over vellow fever in Gowanus and in the outskirts of Brooklyn. On this same day, August 18, the infected ships were moved from Gravesend Bay to Southwest Spit. In the meantime, the question of Castleton's right to barricade the gate of the Quarantine Station had been taken to the courts and on August 23 in the "Roff Case" Judge Birdseve declared that the town had exceeded its authority.44

Although New York City escaped yellow fever, the lower end of Long Island was not so fortunate. By the end of August a se-

rious outbreak in Fort Hamilton, situated on Gravesend Bay, caused the majority of the inhabitants to flee from the area. One New York newspaper declared: "Nurses are needed, and neither love nor money can procure them." Two days later, August 30, the disease appeared among the troops on Governor's Island, where it was attributed to the bedding which had been thrown overboard from infected ships. One observer blamed the Fort Hamilton outbreak upon the fact that for many days the prevailing wind had blown directly over the quarantined vessels in Gravesend Bay and thus carried the contagious matter to land. Although the observer was unaware of the role of insect vectors. his theory may well have been correct, since infected mosquitoes could easily have been blown across the three-quarters of a mile of water separating the ships from the village. Within a few days a Fort Hamilton Relief Society was organized and an emergency hospital was opened, but it was not until October o that the Society was able to announce that the epidemic was waning.45

The events on Staten Island and Long Island created some apprehension in New York City, but other than those concerned directly with health, few city officials seem to have worried about yellow fever. On September 2 City Inspector George Morton declared that yellow fever was a "fearful phantom" of the citizens' imaginations and attributed the rumors of its presence to "the industrious exertions of parties interested in promoting the prosperity of other and rival cities. . . . " Mayor Fernando Wood criticized the health commissioners for hurting commerce through their stringent quarantine regulations. The commissioners responded by asserting the primacy of public health over all other considerations and by expressing shock at the Mayor's attitude. Whatever officials may have thought, the public believed the Quarantine Station was located too close to the city and there were renewed demands for its removal, Leslie's Illustrated Newspaper appealed to New Jersey officials to permit the use of Sandy Hook, and the Daily Times and Daily Tribune added their voices to the clamor for a change. In September and December joint meetings of committees representing aldermen from New York City, Staten Island. Brooklyn, and New Jersey met to study the problem, but nothing was accomplished.46

The State Legislature took up the question in 1857. On March 6

it passed an act creating a board of three commissioners and authorizing them to spend up to \$150,000 to procure and equip a new site for the Quarantine Station. At the same time the Legislature strengthened the power of New York and Brooklyn health officials. They were, for example, authorized to remove any potentially infected persons or goods to the quarantine grounds. In addition, the penalties for obstructing health officers or for boarding vessels in quarantine without first securing permission were increased.47 After considering several possible locations, early in May the three commissioners purchased Wolfe Farm on Seguine's Point, Staten Island, for \$23,000. No sooner was the news made public than a group of 20 men invaded the farm, vandalized the furniture and buildings, and concluded their work by setting everything on fire. The Daily Tribune accused local officials of making no effort to stop this vandalism. Another journal, in an editorial headed, "The Quarantine War," declared the action unwarranted, but added that the commissioners had made a poor choice, since the site was too close to a residential area and the anchorage was inconvenient. Nonetheless, the editor demanded the apprehension and conviction of those guilty. A subsequent story in the paper attributed the violence to ovstermen who were afraid that the proposed quarantine station would prevent them from using the ovster beds on the west side of Staten Island.48

The unrest continued, and a further attack was made on the new quarantine site in July, but the mob was driven off by the police. The following summer, as more vellow fever cases were landed at the quarantine hospital, the agitation intensified. On September 2 a large mob, many members of which were armed and disguised, attacked the quarantine grounds and burned all the buildings. One employee was shot in the head while defending the hospital, and patients were dragged out of the building and left lying on the ground. A large force of marines and police, which arrived to quell the disturbance, arrested several of the rioters. 49 The New York newspapers and journals blamed the Governor and health officials for not anticipating the trouble, although the Castleton Board of Health was probably responsible for instigating the riot. According to Dr. Theodore Walser, an assistant physician at the Marine Hospital, the Board had publicly referred to the guarantine hospitals as a nuisance and had called upon the citizens of Castleton "to abate it." Dr. Walser also reiterated a charge made by many observers that the real motive of those opposing the quarantine ground was to enhance the value of real estate on Staten Island.⁵⁰

A few days after the riots, the health commissioners resolved to build fireproof buildings on the same location and recommended that Richmond County be forced to pay for their cost. It is highly unlikely that the citizens of Richmond County would have agreed to pay for the construction, but the work was pushed ahead. On November 30 the buildings were reported to be almost finished, although it was suggested that they might be destroyed again the following spring. The issue continued to be debated in the newspapers and in the State Legislature throughout the fall and winter. Unable to arrive at a permanent solution, on April 19, 1859, the Legislature granted \$50,000 to the quarantine commission it had appointed in 1857 and authorized it to provide temporary accommodations for those sick with contagious diseases.⁵¹ In June the commissioners bought the "Falcon," an old steamer, and proceeded to fit it up as a floating hospital. In part because the "Falcon" could handle only 175 patients and partly as a result of local objections to pest hospitals, the commissioners decided to send smallpox cases to Blackwell's Island, typhus and other fever patients to Ward's Island, and yellow fever victims to the floating hospital.⁵²

While New York was struggling with its quarantine problem, a series of National Quarantine Conventions met in an attempt to improve and standardize quarantine procedures in the main port cities. The first meeting at Philadelphia in 1857 was largely organizational and set the stage for a second Convention held at Baltimore in 1858. At this meeting, to which both the New York Board of Health and Chamber of Commerce sent delegates, the Convention divided itself into committees to study various health topics and asked these committees to present full reports at the next meeting, to be held in New York, April 27-30, 1850.53 The proceedings and debates of this latter meeting, over which Dr. John H. Griscom presided, provide a good insight into the New York quarantine system. In the course of discussing quarantine measures, Dr. Elisha Harris declared that the state-appointed health officers in New York were usually concerned primarily with "the increase of perquisites, and the increase of that personal and political power which is sure to be abused." Almost every health officer, he said, had attended each legislative session and returned with new quarantine and health laws designed to strengthen his political power. The existing quarantine laws, he continued, are inconsistent and oppressive, designed neither for commercial nor sanitary benefit. Handling cargoes in quarantine, he concluded, has become one of the great prizes of partisan politics.⁵⁴

Another New Yorker, Dr. A. H. Stevens, proposed that the personal quarantine for cases of yellow fever be eliminated on the grounds that there was no evidence of the disease being spread by direct contact. After a lengthy discussion, the resolution passed, but with an amendment stating, "provided that fomites of every kind be rigidly restricted." A Dr. Anderson of Staten Island offered a motion to abolish all quarantine in New York City except for the detention of infected vessels during summer months. Dr. Griscom, however, made a stirring appeal in favor of an effective quarantine system and Dr. Anderson's motion was withdrawn.55 The New York Chamber of Commerce, which had participated in the Convention on July 7, adopted the report of its own committee on quarantine. This committee had assailed the New York system as "unwise and iniquitous," and had denied that it had any beneficial results except to bring "inordinate profits to [its] officers, agents, and employees. . . ." The Chamber of Commerce proclaimed that the old quarantine ideas were outmoded, and asserted that while fomites might carry the disease, a clean, healthy person was perfectly safe. Acting on its committee's findings, the Chamber of Commerce proposed four modifications: first, passengers and crews should be free to leave detained vessels after having been subjected to "proper personal purification;" second, quarantine charges should be reduced; third, the quarantine laws should be interpreted more liberally with respect to suspected vessels; and finally, the quarantine station should remain within the waters of New York.⁵⁶ Sensitive to the widespread agitation for changes in the quarantine laws, on January 4, 1860, the Governor of New York in his annual message reviewed the whole problem and recommended revising the health laws so as to reduce the "exactions and annovances" arising from the existing regulations. The Legislature, however, always reluctant to eliminate a lucrative source of patronage and confronted by divisions within the medical profession and among the ranks of the reformers, disregarded his plea.⁵⁷

Earlier, in 1858, the state had undertaken a long-range program to solve the old question of a suitable location for the quarantine station by building an island on the Old Orchard Shoals, a shallow area off the Staten Island coast about two or three miles from Seguine's Point. Other than this step, matters remained in abevance for several years. Yellow fever was a constant threat during this period, but by good fortune and/or the effective work of Health Officer Gunn, the cases were restricted to the quarantine hospital. For example, Mayor George Opdyke reported in January of 1863 that 016 cases of vellow fever, with 445 deaths, had occurred on vessels coming to New York City. Upon arrival, a total of 44 active cases, of which 18 proved fatal, had been taken from these ships and sent to the quarantine hospital. For whatever reason, New York and Brooklyn remained free of yellow fever. Although he praised the existing quarantine system, Mayor Opdyke urged that the law be amended so as to make it more effective during the summer months.58

With the Chamber of Commerce, city officials, and sanitary reformers all demanding a change-and yellow fever still threatening-the Legislature finally overhauled the quarantine laws. On April 29, 1863, a new law declared that the quarantine establishment should consist of all necessary warehouses and wharves, an anchorage for vessels, a floating hospital, a boarding station, a burial ground, and a residence for the officers and men. It specified that the warehouses and wharves were to be constructed in the lower bay of New York but not on Staten Island, Long Island, or Concy Island. The shoal area previously mentioned was already in process of being filled in and other small islands were to be enlarged to make room for the quarantine facilities. A new floating hospital equipped to handle 100 patients was to be put in operation. and the "Falcon," the old floating hospital, was designated as the boarding station. The floating hospital was to receive yellow fever patients from April 1 to November 1 and typhus cases during the remainder of the year. Ordinarily, as had been specified in the previous law, ship fever (typhus) cases were to be sent to Ward's

Island and smallpox to Blackwell's Island. As a concession to commercial pressure, section eleven of the law limited the quarantine to four diseases—yellow fever, cholera, typhus, and smallpox.⁵⁹

The law classified merchandise according to what was thought to be its ability to carry contagion or infectious particles (sometimes called fomites). Only the first category, goods such as clothing, rags, hides, and other items derived from animals, cotton, hemp and wool, which were considered most dangerous, were to be subject to a compulsory quarantine. The second group, such as sugar, silks and linens, fell into an optional category, while all other goods were to be exempt from quarantine restrictions. This provision was designed to simplify the quarantine process and thus eliminate a major source of complaint. Another major change was the creation of a board of three commissioners of quarantine. This board was given complete jurisdiction over all quarantine grounds and facilities; in addition, it was to constitute a board of appeal from any decisions of the health officer. The commissioners, appointed by the Governor for three-year terms, were required to be residents of the New York Metropolitan District. One last clause deserves special mention. Previously the Health Officer had been authorized to summon the local police for assistance. The new law authorized him to call upon as many as ten members of the Metropolitan Police for a period not exceeding twenty-four hours. Two years later, an amending act provided for the appointment of five special policemen to serve directly under the Health Officer and gave him the right to the services of five additional men from the Metropolitan Police for periods up to five days.60

While the new law eliminated some of the friction engendered by the quarantine system, it still left health officials subject to the vicissitudes of politics. Shortly before the law was enacted, Health Officer Gunn, who was apparently doing a creditable job under difficult circumstances, was removed and replaced by Dr. John Swinburne. The occasion for the change was the election of a Democratic governor and the fact that Gunn was a Republican appointee. In 1864 and 1865 a series of appropriation measures and supplementary acts were passed to carry out the provisions of the 1863 law. One in 1865 appropriated \$1,000 for the expenses of three commissioners to negotiate with representatives of

the federal government about creeting warehouses and storage space for goods subject to quarantine. Another authorized the Governor to appoint commissioners to deal with New Jersey with respect to quarantine jurisdiction in the lower bay.⁶²

A quarantine system was gradually evolving which was both simpler and more effective, but despite all reforms, merchants and shippers still remained unappeased. In the summer of 1865 the Shipowner's Association charged that the Health Officer was "clothed with more power than the President of the United States. . . ." He had, it asserted, dictatorial authority over all vessels arriving in port regardless of the nature of their cargoes or the presence or absence of infectious disease. The Association also protested against what it felt were the excessive fees charged by the Health Officer. 63 While the quarantine system was permeated with politics and reflected the inadequate understanding of disease causation which characterized the medical thinking of the day, it had kept yellow fever at bay for over forty years and helped to minimize the effect of the repeated importation of smallpox, typhus, and Asiatic cholera. By present standards it was expensive, time-consuming, and relatively ineffective; yet compared with the economic cost alone of one major yellow fever epidemic the quarantine system far more than justified its existence.

Notes to Chapter 14

- 1. See Chapter 12.
- 2. N.Y. State Laws, 48th sess., chap. 212, April 18, 1825, p. 322.
- Ibid., 48th sess., chap. 24, January 28, 1826, pp. 18-19; 52nd sess., chap. 302, April 29, 1829, p. 436.
- Daily Advertiser, August 14, 16, September 7, 11, 1827; M.C.C., 1784-1831, XVI, 142.
- N.Y. State Laws, 50th sess., 2d meeting, Revised Statutes, chap. 14, September 11, 1827, pp. 265-71.
- 6. American, March 24, April 3, 7, 1828.
- 7. Ibid., July 26, 28, 29, 1828.
- N.Y. State Laws, 68th sess., chap. 27, May 18, 1845, p. 21.
- American, February 11, March 6, 1829; N.Y. State Laws, 53d sess., chap. 333, April 20, 1830, p. 416.
- N.Y. State Laws, 54th sess., chap. 304, April 26, 1831, p. 409; 62d sess., chap. 359, May 7, 1839, pp. 331–32.
- Peter S. Townsend Papers, in N.Y.A.M. Mss., George Rosen, "Politics and Public Health in New York City (1838–1842)," Bull. Hist. Med., XXIV (1950), 441–61.

- 12. N.-Y. Inl. of Med. & Surg., II (1840), 491.
- N.Y. State Laws, 63d sess., chap. 19, February 8, 1840, p. 15; chap. 289, May 13, 1840, pp. 233-35.
- 14. Docs. of Bd. of Aldermen, no. 101, IX, 1077-1217.
- 15. N.Y. State Laws, 68th sess., chap. 27, May 18, 1845, p. 21.
- 16. Daily Tribune, March 17, 1849.
- 17. N.Y. State Assembly Document Number 60 (Albany, 1846).
- 18. Ibid., 41-42, 59.
- 19. N.-Y. Inl. of Med. & Coll. Sci., VII (1846), 217-20.
- Friedrich Kapp, Immigration and the Commissioners of Emigration of the State of New York (New York, 1870), 95-104; N.Y. State Laws, 70th sess., chap. 195, May 5, 1847, pp. 182-88.
- 21. N.Y. State Assembly Document Number 60 (Albany, 1849), 9-10, 14-15.
- 22. Ibid., 15-16, 20-23.
- 23. See Daily Tribune, January 1-March 10, 1849.
- 24. N.Y. State Laws, 72d sess., chap. 309, April 10, 1849, pp. 449-50.
- 25. Ibid., chap. 350, April 11, 1849, pp. 504-12.
- 26. Ibid., 73d sess., chap. 275, April 10, 1850, pp. 597-607.
- 27. N.-Y. Med. Gaz. & Jul. of Health, H (1851), 2, 62, 87.
- 28, Ibid., 99.
- 29. Ibid., 137, 149-50.
- 30. Daily Times, November 8, 1851, January 19, 26, 28, 1852.
- 31. N.Y. State Laws, 75th sess., chap. 78, March 20, 1852, p. 74.
- 32. N.Y. State Senate Document Number 57 (Albany, 1853), 1.
- 33. Daily Times, February 20, May 19, 1852.
- 34. Ibid., July 24, 1852, May 20, 1853.
- N.-Y. Med. Gaz. & Int. of Health, IV (1853), 87-88; Daily Tribune, February 8, 1855.
- 36. Daily Tribune, January 18, November 22, 1854; Daily Times, March 15,
- 37. Daily Times, July 26, 30, September 14, 1855.
- Ibid., May 2, July 22, 1856; N.Y. State Laws, 79th sess., Joint Resolution, January 29, 1856, p. 357.
- 39. Daily Times, May 23, July 8, 17, 19, 25, 1856.
- 40. Ibid., August 7, 9, 11, 1856.
- 41. Ibid., August 11-13, 1856.
- 42. Ibid., August 11, 1856.
- 43. Ibid., August 11, 14-16, 1856.
- 44. Ibid., August 11, 14, 18, 20, 23, 1856.
- 45. Ibid., August 29, 30, September 1, 10, October 10, 1856.
- 46. Daily Tribune, September 2, 25, 1856; Leslie's Illustrated, September 13, 1856; Daily Times, December 23, 1856.
- N.Y. State Laws, 80th sess., chap. 68, March 6, 1857, I, 163-69; chap. 412, April 14, 1857, I, 833-35.
- 48. Daily Times, May 8, 9, 12, 1857; Daily Tribune, May 8, 19, 1857.
- Leslie's Illustrated, July 25, 1857; Daily Times, September 2, 4, 8, 13, 1858; N.-Y. Inl. of Med., 3d ser., V (1858), 293-95.

- Reports, Resolutions, and Proceedings of the Commissioners of Health of the City of New York, for the Years 1856, 1857, and 1859 (New York, 1860), 377.
- Ibid., 320-23; Times, September 15, 1858; N.Y. State Laws, 82d sess., chap. 508, April 19, 1859, p. 1167.
- 52. Times, June 13, 29, 1859.
- 53. Ibid., April 20, 26, May 3, 1858, April 28, 1859.
- 54. Proceedings and Debates of the Third National Quarantine and Sanitary Convention (New York, 1859), 37-39.
- 55. Ibid., 43-45, 50, 73-74, 201.
- 56. Chamber of Commerce, Report of Select Committee on Quarantine adopted July 7, 1859 (New York, 1859), 7-18 [N.Y. Public Library pamphlet collection].
- 57. Times, January 4, May 1, 1860.
- Daily Tribune, December 29, 1858; Docs. of Bd. of Aldermen, no. 1, XXX, pt. 1, pp. 18-19.
- 59. N.Y. State Laws, 86th sess., chap. 358, April 29, 1863, pp. 573-88.
- 60. Ibid., 88th sess., chap. 592, April 28, 1865, pp. 1205-09.
- 61. Daily Tribune, March 9, 21, 1864.
- 62. N.Y. State Laws, 87th sess., chap. 347, April 25, 1864, pp. 814-15; 88th sess., chap. 598, April 28, 1865, p. 1238; chap. 613, April 29, 1865, pp. 1272-75.
- 63. Times, August 10, 1865.

15

The Lucrative Business of Not Cleaning the Streets

The same factors which had brought a steady deterioration in the sanitary condition of New York streets during the first quarter of the century continued to operate for the next forty years. The mushrooming of the city vastly increased the sanitary problems, and a steady influx of newcomers conditioned by a rural environment made the existing sanitary laws almost unenforceable. A city-operated street-cleaning system alternated with one run by private contractors, but neither proved effective for any sustained period. The appearance of Asiatic cholera periodically brought a major cleanup, but once the danger was past, the streets soon became the customary depository for garbage, offal, and rubbish.

Then, as now, many obstacles were placed in the path of conscientious officials, and all too often the courts sided with dishonest or inefficient private contractors. In December of 1825, because of negligence on the part of one of the contractors, the street inspector was ordered to clean Bancker Street. He hired Hugh and Peter Smith, who, after finishing their work, presented a bill for \$20. The matter ended in the courts where the ruling favored the contractor on the grounds that he had not been notified in writing. By losing their case, the Smiths were compelled to pay an additional \$5.19 court costs. Fortunately, the Common Council agreed to recompense them for the full amount. What was significant for the future of New York City was the bald fact that the jury deliberating the case had considered it of little consequence that, despite repeated warnings, the contractor had failed to fulfill his obligations.¹

In 1825 the Common Council divided the municipality into ten districts and appointed a private contractor to handle street cleaning in each area. The assumption that a number of small contractors would do a better job than one or two large firms proved to have little validity, and before long the public was again expressing outraged indignation over the condition of the streets. In February of 1826 one newspaper sareastically informed the street inspector for the Second Ward that if he wished "to examine the internal or external conformation of cats," he could do so by visiting Beekman Street.2 Meanwhile, the City Council was again reviewing the street-cleaning problem. In glancing back, the Council noted that during late 1824 and early 1825 the street contractors had "failed entirely in the performance of their contract" and the streets had become so filthy that the aldermen and assistant aldermen had been ordered to assume responsibility without delay, When the city settled its accounts with the contractors in the spring of 1826, the latter demanded compensation for the loss of the manure which the city had cleared from the streets. Rather than punishing them for their negligence, the city agreed to pay part of the claims. The effrontery of the contractors in this instance was matched only by the weakness or dishonesty of the city officials.3

As a result of this debacle, on April 3, 1826, a special committee of the Common Council recommended that street cleaning be taken out of the hands of private contractors on the grounds that "private interest is too frequently at variance with public convenience. . . ." Although it carefully stated that it was not criticizing the contractors, the committee concluded, nevertheless, that the work could best be done by public agents. It estimated that if the city would buy horses and carts, the expense of street cleaning could be paid from the proceeds of the sale of manure. So convincing was this report that the Council promptly passed "A Law to regulate the removal of filth & Dirt" which provided for the appointment of a street-cleaning force and authorized the Superintendent to buy 40 horses and carts. As had been the case, the residents were still responsible for sweeping the streets in front of their property; the sole responsibility of the city was to remove the piles of dirt.4

The change proved quite beneficial. A newspaper commented in August of 1826 that the streets were much cleaner than they had been for several years, and the Superintendent of Streets was able to report at the end of six months that the total expenditure

was only \$64.04 in excess of the income derived from the sale of manure. The extra costs incurred in clearing snow from the streets during the ensuing winter raised this figure considerably, but even so the Street Superintendent was able to report that the deficit for the first year was only \$3,555.67—a remarkably low sum for cleaning the streets of a major city. Even allowing for depreciation, the street-cleaning committee reported, the total deficit would be no more than \$5,000.5

Under the able direction of Superintendent John Bloodgood, the street-cleaning department seems to have functioned well for about three years, and the sale of manure and dirt from the streets continued to pay most of the expenses. For example, Bloodgood reported a net profit of \$1,338.10 in the quarter ending July 31, 1828. In this same year the committee on cleaning streets reported to the Council that it was well satisfied with the operations of the department. It pointed out, however, that there was too much work for the officer in charge. The appointment of an additional superintendent, the committee declared, would increase revenue by permitting more attention to be paid to the sale of manure.6 Nothing came of this recommendation, but a year later the committee was directed to investigate the possibility of having the streets swept at public expense. The idea that the city should assume responsibility for sweeping the streets was a little too novel, and the City Fathers continued to mull over the subject for several years. By 1829 problems again arose in connection with the streets and the customary complaints were heard about the piles of dirt and refuse. Indicating a general deterioration within the department, the committee on cleaning streets accused the Superintendent of failing to keep proper financial accounts. Among the committee's recommendations was one apparently designed to hold officials financially responsible. It required the inspectors of manure to report all sales of such material under oath.7

A perennial complaint in these years related to the pervading dust arising from the constant traffic and the prevailing winds. Philip Hone, a former mayor of the city, recorded in his diary in May of 1831 that the city was undergoing its usual metamorphosis with old buildings coming down and new ones rising. Pearl Street and Broadway, he wrote, were almost impassable by virtue of the piles of rubbish and "by the dust which is blown about by

a keen north-west wind." In this same month, the editor of the Evening Post compared the piles of dust and filth in the main streets to the Alps and the Andes and declared that the by-streets were almost impassable "except to persons used to making their way through hogs and morasses."8 In an effort to keep down the dust, in December of 1831 the Board of Aldermen directed the City Inspector to see that the carts employed in collecting ashes were kept tightly covered. The piles of manure collected by the street cleaners were another recurring source of complaint. In summertime these heaps bred huge quantities of flies and created an unbearable stench. On July 1, 1831, the street-cleaning committee recommended that two permanent locations be designated for manure deposits, one on the East Side and one on the West. The rapid growth of the city and the corresponding increase in the number of horses required for transportation, however, meant that manure piles were to remain a major problem until well into the twentieth century.9

News that Asiatic cholcra was sweeping through Europe in 1831-1832 aroused great apprehension in the United States and made the inhabitants of major cities acutely aware of their inadequate sanitary programs. In March of 1832, as the threat of cholera loomed larger, the Board of Aldermen directed the City Inspector to draw up a plan for sweeping the streets twice a week and for removing the dirt as soon as collected. Shortly thereafter, the street-cleaning committee undertook another investigation of the problem and presented its findings to the Board of Assistant Aldermen. The committee pointed out the necessity for public sweepers, since many citizens who could not afford to hire help were reluctant to appear on the streets sweeping along with the servants of their wealthy neighbors. The estimated cost of having the streets swept was placed at \$1.25 per household. To keep expenses to a minimum, the committee recommended macadamizing or paving the streets with smooth stones. As a means of increasing efficiency, it was also proposed that the horses and carts be placed directly under the supervision of the street inspectors in each district.

An ordinance including all of these recommendations was quickly passed by the Common Council. It provided for the appointment of street inspectors in each ward who were to be responsible to the ward alderman and assistant alderman. These inspectors were directed to remove all dirt from the streets twice weekly and to make a full report of their activities to the Superintendent of Streets. The manure and rubbish carts were to be tightly constructed in accordance with the directions of the City Inspector. The remaining provisions of the ordinance repeated the earlier injunctions against befouling or cluttering the streets with such substances as slops, offal, garbage, and rubbish.¹⁰

The appearance of Asiatic cholera late in June of 1832, shortly after the new law was enacted, provided a strong impetus for sanitation and by the end of summer the city had undergone a thorough cleansing. One of the newspapers commented at the end of August that the streets "have never been so clean for thirty years past, as at this moment."11 The new system, aided by the continuing threat from Asiatic cholera, functioned quite well for several years, but its cost rose steadily. A good part of this increasing expense stemmed from the rapid expansion of the city. In 1835 the street committee, in recommending that more sites be made available for depositing manure, pointed out that the expense of carting it beyond the city limits was becoming increasingly burdensome. Another reason for the rising costs arose from mismanagement and politics. A letter in the Evening Post on March 18, 1839, stated that although the streets had been deluged for three months past with mud and offal, "not an ash cart or a sweeper [was] to be seen in any direction." Now that an election was at hand, the letter continued, "the sweepers have become as numerous as the locusts of Egypt...."12

Conscious of the mounting city expenditures, in 1839 Mayor Isaac L. Varian called for more economy in civic administration. He noted that the expense of street cleaning had risen from \$26,000 in 1830 to \$150,000 in 1838, although the number of miles of streets to be cleaned had increased from only 101 in 1830 to 134 in 1839. As a solution, he suggested that the job be performed by private contractors. A special committee of the Board of Aldermen agreed that the growth of street-cleaning costs was attributable largely to extravagance rather than to the expansion of the city and suggested that letting the contracts to several individuals would bring improved service and lower costs. An additional advantage from using small private contractors, the committee

stated, was that it would enable the city to dispense with the services of the inspectors of manure, health wardens, and dock masters. The duties of the latter two officials could then be performed by the street inspectors, "to whom they properly belong." The following year, 1840, Varian, the only Mayor to reduce street-cleaning costs during this period, again called for economy. Once more the question of using private contractors was debated, but no action was taken.¹³

On March 8, 1841, the street-cleaning committee strongly appealed for the reintroduction of the contract system. The idea was apparently gaining converts, for shortly afterward, the Superintendent of Streets was asked to consider the street-cleaning problem and make suggestions for reducing costs and increasing efficiency. In his report he reviewed the history of street cleaning in New York and showed the precipitous rise in costs during the preceding eight years. After deducting the revenue from the sale of manure, expenses had increased from \$28,988.28 in 1832 to \$45,845.09 in 1835, and to \$111,218.93 in 1840. He attributed this huge increase in part to the laying of water pipes, which had both raised costs and reduced revenues, and in part to the limited number of places available for depositing manure and rubbish. This latter, the Superintendent said, had drastically increased cartage costs. Another source of difficulty was the failure to enforce the ordinances prohibiting the throwing of dirt, offal, garbage, and rubbish into the streets. The hawking of fish and vegetables, he added, was responsible for much of the trouble, since peddlers tended to use the gutters as receptacles for fish heads and other matter. He was also critical of the many extra obligations imposed upon the street inspectors which had decreased their effectiveness in performing their chief duties. While there was considerable truth in the Superintendent's assertions, he failed to mention the fact that the street-cleaning department was quite obviously involved in politics.14

In the summer of 1842, motivated either by a desire for efficiency or by political or personal considerations, the Common Council decided in favor of the contract system. The resulting ordinance stipulated that if the contracting firm failed to live up to its obligations, the Superintendent of Streets or the street inspectors could have the work done and charge the cost to the

firm. A contract was entered into which immediately led to a clash between Mayor Robert H. Morris, an extremely honest administrator, and the Common Council. It soon became apparent that the contractor was negligent, and part of his appropriation was taken by the Mayor and allocated to the street superintendent for use in cleaning the streets. When the Board of Assistant Aldermen directed Mayor Morris to repay the money, he bluntly told them to remember their place in the city government and not to attempt to tell the Mayor what to do.¹⁵

Since the street-cleaning ordinance clearly justified the Mayor's action, the City Council struck back in December of 1842. A special joint committee denounced the clause in the ordinance which authorized city officials to have the work done at the contractor's expense in the event of his negligence. It claimed that the clause gave municipal officers "absolute and controlling power. . . ." In what appears to have been a complete giveaway, the committee proposed that the contractor, in addition to being paid for removing the dirt, should be given free dumping grounds and all receipts from the sale of manure, cinders, and so on. Significantly, no mention was made of any penalty for failing to comply with the terms of the contract. Despite a veto by Mayor Morris, the revised ordinance passed. Almost immediately another squabble broke out over the awarding of the contract. The Democratic newspapers criticized the Common Council, at that time dominated by the Whigs, for not awarding the contract to the lowest bidder. In response, the Daily Tribune, a Whig newspaper, justified the action on the grounds that the low bid was not made in good faith. 16

For the next year or two the Democrats and Whigs hurled accusations and countercharges at each other. The Democrats were particularly incensed at the Whigs for giving a five-year contract to the firm of Britton, Carnelly, Camly, and Townsend, and took every opportunity to accuse the contractor of negligence. Even the Daily Tribune, which staunchly defended the contract, had some reservations. An editorial in July of 1843 complained of the practice of throwing garbage in the street to feed the thousands of loose hogs. As criticism mounted, a proposal was made in the Common Council to return to the original system of having householders sweep the streets; another suggestion was that the existing contract be abtogated and that private contracts be made

for each district. Early in August of 1843 the Common Council voted to rescind the 1842 contract and turn street cleaning over to the Superintendent of Streets. The change proved short-lived. The following summer, 1844, another ordinance returned street cleaning to the contract system. It divided the city into six districts for contracting purposes. The provisions generally followed those of the previous law with one exception; it was specified that if the contractor failed to perform his obligations, he was to be given twenty-four hours' notice, after which the Superintendent of Streets could have the work done at the expense of the offending contractor.¹⁷

While occasional complaints were heard about the condition of the streets, most criticisms centered on the huge piles of manure and garbage accumulated on the wharves and slips. The committee on cleaning streets reported on March 31, 1845, that the sheer quantity of manure being collected was creating grave problems. Both the official dumping sites and the temporary ones were filled because the contractors were not able to remove the manure quickly enough. The committee felt that the contractors were trying to do a good job and proposed that the city provide barges or scows for removing the offending material to Blackwell's Island. Although the committee had carefully avoided laying any blame on the contractors, rather significantly on May 23, the Comptroller's Office reported that the city had abrogated the contracts in four of the six districts because of nonperformance and had directed the Superintendent of Streets to proceed with the street cleaning at the expense of the contractors. 18

By 1845 political corruption was reaching a new high in the municipal government, and the street-cleaning department, apparently one of the most lucrative sources of political patronage, was witnessing a steady rise in costs and a comparable decline in the quality of its service. For the next few years the history of the street-cleaning department followed a fixed pattern—street-cleaning contracts would be let, the contractors would neglect their duties, and the Council would instruct the Superintendent of Streets or the ward aldermen to assume responsibility for the job. Year after year Common Council committees alternately urged the city to assume the task of street cleaning or to return to the contract system. Both methods proved costly and neither seemed to work.

Occasionally the change from one to another brought a temporary improvement, but it is clear that conditions were steadily deteriorating. An editorial in February of 1846 described the snow in the streets as "garnished with frozen slops, potato-parings, and other kitchen refuse. . . ." In May of 1847 Mayor William V. Brady said in effect that there was almost an inverse ratio between the amount of the street-cleaning expenditures and the condition of the streets, and he called for an end to "this extravagant and wasteful expenditure. . . ." ¹¹⁹

The reappearance of Asiatic cholera in 1849 brought a much needed cleanup. The editor of one newspaper in the spring preceding the epidemic had described how by violent exertions the street cleaners had piled the mud and dirt "into long ridges forming embankments along the outer edge of the sidewalks." A few days later the same editor declared that the streets were almost impassable and that he had "lost all faith in Street Contractors, and [had] barely patience enough to last till the establishment of another regime."20 Stirred to action by the threat of cholera, in April the State Legislature passed an act prohibiting the throwing of any deleterious substance into the streets and authorizing the Mayor and Council to subject offenders to five days in jail and a \$10 fine. In May Mayor Caleb S. Woodhull lashed out at the contractors, declaring that they were more concerned with "clean profits" than clean streets. Even the most skillfully guarded streetcleaning contracts had proved almost impossible to enforce, he said, and he urged the abandonment of the entire system. Woodhull, a forceful mayor, used the powers of his office effectively and was able to bring about a major cleanup during the ensuing months. Whether or not he could have mobilized public support without the presence of Asiatic cholera is difficult to say. The same public which was normally quite apathetic to filthy streets immediately became filled with virtuous indignation at the appearance of a few cases of cholera or yellow fever, diseases which they associated with dirt. Possibly the best tribute to Mayor Woodhull's work was a newspaper comment in the fall of 1849. that although the streets were unusually clean, the expenses of the street department had dropped from a high of \$180,000 in 1847 to only \$129,000 in 1849.21

During Woodhull's administration the improvement in the

city's sanitary condition had come about largely as a result of properly enforcing the existing laws. The sanitary code was more than adequate, but the public ordinarily paid little attention to it, and the officials entrusted with its enforcement at best performed their duties in a perfunctory fashion. With the close of 1849 the customary laxity, corruption, and inefficiency quickly returned. In January of 1851 the Street Commissioner presented a discouraging picture of his department. He bitterly complained that the Police Department was not enforcing the sanitary laws and that arrests were rarely made for throwing garbage into the streets. The police claimed, he said, that it was futile to make arrests since the judges seldom exacted any penalties. So much garbage and debris was being tossed into the streets that before the sweepers had finished conditions were almost as bad as when they started. Their work was further impeded by the filthy water discharged into the streets by distilleries and manufacturing companies, and by the disruption and debris arising from sewer and gas-line construction. The only hope, the Commissioner declared, lay in a strict enforcement of all sanitary laws. If necessary, he added, policemen who failed to arrest offenders should be suspended from $duty.^{22}$

The appeal was all in vain. Newspaper editorials, diaries, and descriptions by visitors all agreed upon the dirtiness of the city's streets. A satirical article in the *Daily Tribune* described how some workmen had discovered a fossil while digging on Broadway: "The fossil was that of a brush broom, and apparently settles the point that at some past age the streets of New-York had been swept. The custom has, however, been obsolete for some years." The *Daily Times* asked rhetorically what had happened to the huge amounts spent for street cleaning, since no one had ever seen a street sweeper. Broadway, the editorial declared, "is as guiltless of broom, as the river."²³

In the early 1850s the city government was operating even more inefficiently than usual, with the Mayor, Common Council, and department heads all happily fighting to undermine each other's authority. Since the public statements of all officials rang with virtuous, high-sounding phrases and the newspaper comments too often reflected the political affiliation of the editor, it is difficult to determine where justice lay. For example, the Common

Council criticized the Commissioner of Streets in the spring of 1852 for appointing inspectors to check on street cleaning and for taking away authority which properly belonged to the police. The Commissioner replied that the 1849 city charter gave him full control over his own department and made him independent of any Council interference. He concluded by telling the Council to let him alone and to permit him to organize his department as efficiently as possible. The Commissioner's brave stand for efficiency, however, was not reflected in the condition of the streets during the ensuing months. One newspaper graphically described the dead rats and garbage "undergoing a process of fermentation, in a pool of stagnant putrid liquid" in the gutters of Grand Street.²⁴

As criticism mounted over the condition of the streets, so did the expenditures of the street-cleaning department. In 1850 the city spent \$124,000 for this purpose; three years later the budget was in excess of \$250,000. With the backing of the newspapers, a reform ticket ran for election in the fall of 1853. The day before the election the Daily Times declared that the health of the city was in the hands of the voters. The election would determine whether or not New York would have clean streets, improved sewerage, and sound health laws.²⁵ Virtue carried the day, and the reform ticket won. Mayor Jacob A. Westervelt declared in his annual message the following January that although more money had been spent on the streets than ever before, it was "notorious that they have never been more neglected." His only remedy was to propose a contract system in which the contractors would be held strictly accountable—a familiar thesis which had been enunciated by most of his predecessors. Full of zeal, the Council asked the Chief of Police why the ordinances prohibiting the throwing of garbage and ashes into the street were not enforced. He explained that the offenders were largely housewives and that his officers could scarcely drag them away from their children. As an afterthought, he made his most telling point when he declared that the public simply did not support the authorities.26

The Daily Tribune in the meantime was demanding action. In an editorial denouncing the filthy streets, the editor wondered whether the election had simply brought "imbecility in place of villainy." Three days later, on March 9, the editor explained the predicament of the new City Council. The former contractors refused to do their work, but the Council was forbidden by the charter to take over street-cleaning responsibility. Letting out new contracts would require giving them to the lowest bidders, who were often unprincipled individuals with no intention of doing a satisfactory job. The Common Council, however, had been able to solve the problem by directing the Board of Health to clean the streets and authorizing the Comptroller to pay all expenses.²⁷ The result was that the streets were given a thorough cleansing. Beneficial as this was, it was only a temporary expedient. Within a few weeks conditions were returning to normal and the customary accumulations of garbage and rubbish were encumbering the streets. In April a group of merchants on Broadway decided to hire their own sweepers for a month in the vain hope that it would shame the officials into doing a better job. Despite the efforts of the reform government, only limited success was achieved. In the 1850s neither the administrative machinery nor the public had reached the level of sophistication necessary to achieve a relatively clean city.

In his report for the year 1855, the City Inspector gave a good summary of the street-cleaning situation. The main streets, he wrote, were fairly clean, but the side streets, especially in the tenement areas, were extremely dirty. He blamed this condition upon the advent of the tenements, since they made it impossible to hold the individual householders responsible for conditions in front of their residences. Of equal importance, he said, was the failure to enforce the sanitary laws. For this, the public, the police, and the magistrates were to blame. In justice to the police, he pointed out, when they did act, the judges invariably permitted the culprits to go free. The contract system, the City Inspector declared, had proved a failure, but whether the fault lay in the negligence of the contractors or the laxity in enforcing penaltics he was not able to say.²⁸

Early in 1855 a major reform was attempted through the introduction of street-sweeping machines and self-loading carts. Their use had been advocated by the *Daily Tribune* as early as 1843. At that time the editor of the *Tribune* had sarcastically observed that he doubted whether the municipal officers would seriously consider the machine since ". . . it cannot vote; and lacking this ability it may seem to the ruling powers to lack the only essential

qualification."29 This intended sarcasm turned out to be a statement of fact twelve years later. The introduction of the machines in 1855 stirred up a horner's nest. The unemployed sweepers were naturally quite unhappy, and the Common Council was bitter over losing some of its patronage. The uproar developed when the contractors neglected their duties, and the Street Commissioner, in a major breach of the accepted political mores, made a temporary contract with Smith, Sickel, & Company to do the work with the new machines. The Council's committee on street cleaning, which had a major voice in awarding contracts, was outraged and demanded that new contracts be awarded. At this point the validity of the contract and the effectiveness of the machines became a matter of dispute. Street Commissioner Joseph E. Ebling claimed in August that the machines were a failure, but in view of what a subsequent grand jury had to say about his activities, Commissioner Ebling was anything but an objective observer. 30

On October 23, 1855, the grand jury indicted a number of contractors and city officials on charges of corruption. According to the indictment, Commissioner Ebling had agreed to use his influence to get a contract for Smith, Sickel, & Company if he could keep all money over \$150,000. When its temporary contract expired, the Company put in a bid of \$144,000 instead of the expected \$175,000, thus making no provision for Ebling. Shocked by this duplicity, Ebling then refused to accept Smith, Sickel, & Company's low bid, and gave the contract to a firm which had asked more than twice this amount. Ebling was in good company, since the City Inspector was among those indicted.³¹ The pervasive corruption which characterized the municipal government apparently included the courts, for nothing came of the indictment and Ebling remained in office. In August of 1856 he requested an additional appropriation of \$100,000 to carry his department through the rest of the year, although according to the Daily Times, he had already spent \$279,689.74. Despite this enormous expenditure, the Times added, "the streets have been and still are scandalously and dangerously filthy...."32

The appearance of yellow fever at the quarantine station that summer aroused concern over the unsanitary condition of the streets, and led the Board of Health to request the Croton Aqueduct Department to permit the nightly use of its water to flush out the gutters. The latter Board refused on two grounds: first, the Croton reservoir was too low; and second, it felt that the sewers were not intended to carry off surface filth. The Croton Board declared firmly that it "cannot consent to do work which another department is paid to perform, and which can be done by that department at less than one-fifteenth the cost." One of the newspapers commented apropos of the proposal to flush the gutters that nothing short of "a torrent like the rapids of the Niagara would do any good. ... "33 Despite dire predictions that the filthy thoroughfares were an open invitation to yellow fever and the strong demands for remedial action, Commissioner Ebling continued on the even tenor of his ways, cheerfully spending the city's money in a fashion best designed to accomplish the least. Meanwhile, the Board of Health appealed for an additional appropriation for street cleaning, but was informed by the City Comptroller that no money was available. Resolutions were introduced into the Common Council to impeach Commissioner Ebling, but his generosity had no doubt won him too many friends and the resolutions were quietly tabled. The City Comptroller demanded to know why the revenue from the sale of manure was so much less under Ebling than under his predecessors, but the Street Commissioner easily explained the situation to the satisfaction of the councilmen. By the end of the year, Ebling had succeeded in spending between \$400,000 and \$500,000-and still the streets remained filthy.34

The following year, 1857, the street contractors, quietly accepting the beneficence of the city, made only the faintest pretense of doing their work, and the City Inspector was directed to take over the task. Although the city was not noticeably cleaner, the cost of street cleaning fell to \$290,000. Significantly, the revenue from the sale of manure, which had brought in over \$32,000 in 1850, dropped to about \$7,000 in 1857.35 Meanwhile, an amended city charter had been pushed through the Legislature which only created more confusion. A new Street Commissioner was appointed under the terms of this charter, but the former commissioner refused to resign. The impasse was not resolved until late in the year when the courts decided in favor of the new man. To add to the confusion, rowdies hired by ex-contractors sought to disrupt the work of the street sweepers.³⁶

Under these circumstances, it is not surprising that there was little if any improvement in street conditions. Things calmed down the following year, 1858, although the City Inspector's Office, already notorious for its graft and inefficiency, was almost overwhelmed by the financial opportunities which came from control over the street cleaning division. Early in 1859 the city government was once again thrown into confusion when a conflict arose over the position of City Inspector, an office second only to the mayor's in importance. When newly elected Mayor Tiemann attempted to replace City Inspector George Morton, the latter, with the backing of the Common Council, refused to give up his office. With two men both claiming the position, all work was held in abevance for several months. The details of this affair have been discussed in Chapter 12; it is sufficient to say here that by summer the question was settled, and an effort was made to remove the accumulated dirt.37

In 1860 the question of street cleaning was again the subject of much discussion in the newspapers and among city officials. The Times, which had reported on January 4 that all funds for street cleaning had been used, early in February demanded an explanation of the "full month of mud, slush, garbage, offal, discase and discomfort . . ." created by the time lapse between the expiration of the previous contracts and the granting of new ones.38 Toward the end of the month the New York newspapers happily reported that negotiations were under way to clean the streets with sweeping machines at a cost of \$300,000 per year. The Mayor apparently signed a contract, but the Board of Aldermen promptly negated it on the grounds that the Mayor had exceeded his authority. Since the Common Council generally controlled the awarding of contracts, it had no intention of surrendering this lucrative source of graft and patronage. Moreover, as the newspapers were quick to point out, sweeping machines could not vote. The Common Council directed City Inspector Daniel E. Delavan to take over street cleaning, but Mayor Wood promptly vetoed the action. The Council next proposed to let out bids for a period of five years. Since the general feeling was that the contractor could make more money paying fines for nonperformance than by doing his job, there was strong opposition to this move, too. 39 Meanwhile, City Inspector Delayan continued to supervise what little street cleaning was done. Although outraged protests over the condition of the streets continued, Delavan managed to spend \$121,816.48 for street cleaning in the period from April through June. This figure did not include the cost of cleaning markets and paying the salaries of street inspectors and other minor functionaries of his department. At the end of the year, Inspector Delavan, noting that the contract system "has in every instance proved a failure," urged more stringent penalties for contractual negligence.⁴⁰

Despite Delavan's recommendations, the next street-cleaning contract, made in February of 1861, proved to be even a greater fiasco than its predecessors. On February 12 Mayor Wood and the Common Council approved a five-year contract with Andrew J. Hackley to clean the streets at a cost of \$270,000 per year, despite the fact that there were a number of lower bidders, one of whom, described by the Tribune as an honest contractor, offered to do the work for \$84,000 per year less than Hackley. The latter, who must have paid well to secure the contract, had no intention of doing more than was absolutely necessary. Late in May a grand jury indicted him for malfeasance, charging him with neglect of his obligations, failing to maintain a proper work force, and a variety of other offenses. The Common Council committee on laws, to whom the charges were referred, stalled for a few weeks and then laid the matter on the table.41 In his report for 1861 City Inspector Delavan bitterly assailed Hackley. The latter, he declared, had managed to take advantage of the wording of the contract to such an extent that he had virtually nullified its intent. By one means or another, Hackley had avoided cleaning the streets for almost half of the number of days specified in his contract. Delavan pointed out that although Hackley did not pay his laborers for these off-days, he still collected full pay from the city. Every privilege granted to Hackley had been abused. On being given the right to use the piers for loading and unloading, he had simply used them to store manure. In addition, he had dumped thousands of loads of manure in the City parks—30,000 loads in the Battery alone. In speaking of the manure, Delavan asked why the contractor was permitted to keep it when the city could sell it for an estimated \$50,000 to \$75,000 annually,42

Although it was clear from the start that Hackley had no in-

tention of living up to his contract, the Common Council refused to take action for over two years. In January of 1863 the Mayor informed the Council that the condition of the streets was so bad that the contract must be abrogated. Unless the councilmen took some action, he said, he would refuse to approve any more payments to the contractor. Reluctant to give up some of their perquisites stemming from the contract, the councilmen delayed for over three months, and it was not until May 15, 1863, that the Hackley contract was finally abrogated. Street cleaning was once again turned over to the City Inspector's Office.48 Shortly after this date, F. I. A. Boole, one of the city's more notorious politicians, took over as City Inspector. Under his amiable direction, the streets were little, if any, cleaner, but the cost was considerably higher. In June the Times editor glumly observed that "the City has for seven years, at least, been almost as dirty as it is todayscandalously and inexcusably dirty . . . disgusting both to the eve and the nose, and full of danger to the health."44

Precisely how much money Boole charged to street cleaning is difficult to ascertain. For the first year and a half he operated his department on a series of special grants. In January of 1865 he requested a budget appropriation of \$750,000 for the coming year, but the amount was reduced to \$500,000 by the City Comptroller. 45 The best and most damaging account of Boole's stewardship is to be found in the testimony before a State Senate Committee, which reported on February 9, 1865, after spending several weeks investigating the City Inspector's Department. Garrett E. Winants testified that he had made a firm offer to remove dirt, ashes, and garbage from the city free of charge, but had been repeatedly rebuffed by Boole. This action, according to Mayor C. Godfrey Gunther, was costing the city \$180,000 per year. The Mayor also charged that Boole had many fictitious names on his payroll, and that during the first year of his administration he had spent about \$800,000, almost twice as much as his predecessor. The Mayor estimated that on the basis of what Boole had spent for street cleaning in July, August, and September the annual cost would amount to \$964,000.46

Further testimony revealed that a reliable private company had offered to clean the streets for \$300,000 a year at a time when Boole was spending around \$800,000. Boole and the City Council

argued that they had refused the offer because the company had asked for the rights to the ashes, garbage, and manure, which would have given them more than the \$300,000 allowed by state law. They did not mention that these and even more lucrative privileges had been given to the previous contractors.⁴⁷ Thomas N. Carr, a former superintendent of sanitary inspection who had been fired in 1864 to make room for Boole's brother, corroborated the testimony of the other witnesses and gave even more damaging information. He cited the tremendous increase in the payroll, pointing out that whereas previously boys had been employed as bellringers to inform the people when the ashcarts were coming, under Boole the pay had been raised to \$2.00 a day and men were employed. He cited case after case of districts in which the number of bellringers far exceeded the number of ashcarts or the number of sweepers on the payroll bore no relationship to the number of cartmen. In conjunction with these statements, other witnesses testified to having bought their jobs in the City Inspector's Department.48

The gross chicanery and cynical corruption revealed by the Select Committee hearings undoubtedly played an important role in convincing the State Legislature of the need for drastic changes in the New York municipal government. A palliative step was taken by the Legislature early in 1865 with the passage of a law placing the letting of street-cleaning contracts in the hands of a five-man commission composed of the Mayor, Recorder, Comptroller, City Inspector, and Corporation Counsel. This law set a maximum ceiling of \$500,000 on the stipend allowable for any vearly contract. Yet Boole and his cohorts managed to hang on to their jobs until the passage of the Metropolitan Health Bill in 1866. In the meantime, they continued to milk the city treasury and render minimal service to its citizens. On Washington's Birthday, 1865, the Times reported that the day was beautiful and sunny, marred only "by the foul surgings of corporation filth in every throughfare and alley-way of the city." The streets, the paper continued, were "composite piles of ice and muck, alternated with a blubbery stagnant Styx of liquid mud."49

As has been pointed out, the growth of tenements and the other changes brought on by a too rapid urbanization would have sorely taxed the best of municipal governments, but New York at the mid-century was only slowly stumbling its way toward a more effective government structure. The same masses of unsophisticated newcomers who were both the victims and creators of the slums were also causing serious political problems. Under the circumstances, the wonder is not that the city was so dirty, but that it managed to survive at all. The battle for clean streets was yet to be won, and even the twentieth century could bring only relative success.

Notes to Chapter 15

- 1. M.C.C., 1784-1831, XV, 690-91.
- 2. Daily Advertiser, February 11, 1826,
- .3. M.C.C., 1784-1831, XV, 233.
- 4. Ibid., 307-09.
- Daily Advertiser, August 8, 1826; M.C.C., 1784-1831, XV, 583, 691-92;
 Report of the Committee on Cleaning the Streets, July 30, 1827 (New York, 1827) [N.Y. H.S. pamphlet].
- 6. Ibid., XVII, 408; American, February 26, 1828.
- M.C.C., 1784–1831, XVII, 635; American, December 13, 19, 1828, August 11, 1829, April 9, September 7, 1830.
- 8. Bayard Tuckerman, ed., Diary of Philip Hone, 1828-1851 (New York, 1889), I, 31; Evening Post, May 20, 1831.
- 9. Prov. of Bd. of Aldermen, I, 167-69, 458.
- Ibid., II, 245; Docs. of Bd. of Aldermen and Assis., no. 36, II, 13-19; Evening Post, June 12, 1832.
- 11. Evening Post, August 31, 1832.
- Docs. of Bd. of Aldermen, 110. 54, II, 233-34; Evening Post, March 18, 1839.
- 13. Docs. of Bd. of Aldermen, no. 1, VI, 1-20; no. 5, VI, 37ff, 50-51; no. 1, VII, 1-20.
- 14. Ibid., no. 74, VII, 787-90; no. 25, VIII, 171-78.
- 15. Ibid., no. 1, IX, 1-6; no. 4, IX, 31-37.
- Ibid., no. 51, IX, 461-71; no. 69, IX, 665-88; Daily Tribune, January 17, 21, 25, 1843.
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- 47. Ibid., 10-11, 567, 602.
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16

Noisome Substances and Public Nuisances

Probably no single subject occupied the attention of city officials, newspapers, and citizens in general as did that of public nuisances. This rubric encompassed manure piles, slaughterhouses, dairies, stables, burial grounds, obnoxious trades, overflowing privies, cesspools, stagnant pools, filthy gutters, and a wide range of annoyances which were offensive to the nose and the eve. To recreate the atmosphere of old New York, one has to visualize a good sized city in which horses supplied the chief motive power for transporting men and goods. They hauled the garbage and night soil, delivered both milk and water, and were omnipresent in the streets. Scattered among the numerous horse stables were the dairies and piggeries which supplied nearly all of the city's milk and a good part of the meat. In the poorer sections individual families often owned a cow and one or more hogs which were left free to roam the streets, feeding upon the garbage and offal. The presence of hogs encouraged butchers and fishmongers to toss their refuse into the streets, which, in turn, encouraged the poor to acquire hogs.

The street manure was theoretically collected two or three times a week by the street contractors, but this service was sporadic at best. When it was done, the manure was piled into heaps and removed whenever it suited the convenience of the contractor. In summer the stables, dairies, and manure piles, not to mention the garbage, offal, and manure in the streets, created an almost unbearable stench and were responsible for literally clouds of flies. Packs of dogs ran loose and were rarely bothered except in the late spring and early summer when an occasional rabies scare led the Board of Health or the Common Council to order the killing of all dogs not muzzled or on leash. The carcasses usu-

ally remained in the streets until the offal contractors got around to picking them up. With an animal population approximating that of the human, dead dogs, horses, cows, and swine were a common sight in the streets. In May of 1853, for example, the City Inspector reported that 439 large dead animals had been removed from the streets along with the bodies of 71 dogs, 93 cats, 17 sheep, 4 goats, and 19 hogs. In warm weather, or when the street cleaners and offal contractors were even more negligent than usual, animal carcasses were far more than visibly present.

The so-called "noxious" trades, which included tanners, dvers, distilleries and the fat, offal, and bone-boiling establishments, were both a menace to public health and an outrage to sensibilities. Originally many of these businesses had been banned from the city, but the rapidly spreading population had encompassed them. Municipal regulations, slowed down by Jacksonian democracy and the principle of laissez faire, had simply not kept pace with the city's expansion. Prominent among this group were the distilleries, which managed to produce several nuisances at one fell swoop. The odor from the fermentation process was often carried for many blocks to the lee side of the distillery, the fetid waste water and other products were frequently discharged into the gutters, and the extensive dairy herds maintained on swill from the distilleries added a pungent tang to the neighborhood atmosphere. The fat and bone-boiling industry was without question one of the worst offenders. The carcasses of animals, in all stages of putrefaction, were piled high in the yards and fed into boilers to be rendered down. In summer it was questionable which was worse, the odor arising from the piles of raw material or the fumes from the processing, but at all times the aroma nearly overwhelmed the neighboring residents. Tanneries were just as bad. The stench from piles of hides, to which bits of putrid flesh were attached, mingled with the acrid fumes from the processing of leather created a distinctive atmosphere in the vicinity of each tannery.

The subject of privies has been mentioned in connection with the sewers. One of the chief nuisances arose from the contents of privy tubs and cesspools overflowing into the gutters and vacant lots. The best-managed ones were cleaned regularly by the scavengers, but even this process left much to be desired. Dr. Griscom, while serving as City Inspector in 1842, left a graphic picture of what this entailed. He told how the tubs from the privics were emptied into the scavengers' carts. According to law, the carts were required to have a tight cover to prevent the contents from spilling. The drivers, however, deliberately placed the cover on loosely so that most of the contents were jolted out as the cart was driven to its dumping place. The drivers recognized that "the greater the quantity scattered along the streets in this way, the less is the labor of the horse, and the sooner is the work performed." The nearest dock or wharf, Griscom said, was the usual place of deposit, with the result that vessels at dock were often smeared with filth. "Small boats," he explained, "which may happen to be within reach of the avalanche, (and they are generally unseen in the darkness,) are either wholly or partially filled, and instances are said to have occurred of their being carried to the bottom with their unnatural load." Not infrequently, Griscom added, "from want of time, of care, or of a decent regard for the comfort of the citizens, the open street, the wharf, or, more frequently still, the slip or dock, is made the receiving place, and the foul offense being committed under cover of darkness, detection is rare."2

Griscom proposed two regulations, one to require privy tubs and night-soil carts to have tight covers, and a second to prohibit emptying night soil into the North or East River south of 21st Street. A committee of the Common Council to which Griscom's request was referred spent two years deliberating before deciding with respect to the second proposal, that increasing the distance night soil had to be carried "would render it too burdensome to the night-scavengers" and would enhance the price charged to owners of privies. The committee, after pointing out that two fertilizer companies were willing to supply boats to remove night soil, recommended mooring boats at specified docks to which the scavengers should be required to take the wastes.3 Though Griscom's recommendations eventually became city ordinances, the situation improved slowly. The few policemen or inspectors were rarely on duty at night, and the scavengers—seldom men of sensitivity-under the cloak of darkness continued to make their task as easy as possible.

The use of slips as depositories for garbage, offal, night soil,

and rubbish had been the despair of civic-minded citizens for many years, and the first half of the nineteenth century saw little change. The city had introduced dredges or "mud machines" to clean the public slips, but their chief purpose was to keep the slips open to shipping. It was assumed, however, that for economic reasons the owners of private slips would do the same. The Council's committee on wharves in 1833 reported that many private slips were a menace to the health of the city and proposed an ordinance requiring owners to keep them clean under penalty of a \$250 fine.⁴ The sanitary problems of New York never arose from a dearth of ordinances—the difficulty as always was in the enforcement. Four years later Mayor Cornelius W. Lawrence declared that the private slips in the lower part of the city needed immediate attention in the interest of health and commerce.⁵

The public slips, over which city officials had complete authority, fared little better than private ones. In 1830 George Templeton Strong described Coenties Slip as filthy enough to infect the whole city with yellow fever. "The water was saturated with filth," he wrote, "and where the sun fell on it, it was literally effervescing—actually sending up streams of large bubbles from the putrifying corruption at the bottom,"6 City Inspector Archer in 1846 spoke of the accumulation of filth in the slips which has "become offensive to the senses and doubtless deleterious to public health." Reiterating appeals which had been made for many years, he recommended building arched stone piers to permit the flow of the river and tide to clean the slips, and using stone facings to make the wharves and docks impervious to water. With the City Council reluctant to embark upon a pressing sewerage construction program, it was not likely to consider a multi-million dollar project to rebuild the wharves and piers. Nor could the question of filthy slips be resolved until adequate facilities were provided for the removal of sewage and garbage.

Since rendering dead carcasses was a profitable business, it is not surprising that the contract for removing dead animals from the streets became a major scandal. The City Inspector's Office had assumed this duty early in the nineteenth century at a time when the number of carcasses did not justify it as a commercial operation. As the century advanced the number of dead animals in the streets rose steadily. For example, in 1837 at a cost to the city of

\$1,200, a total of 347 dead horses, 1,182 dogs, 3,091 cats, 9 cows, and 96 "sundry nuisances" were removed.8 In 1842 the Common Council gave the exclusive right to collect all dead animals lying in public places to Messrs. Collon and Cantell. The ordinance further provided that the Collon and Cantell establishment on 41st Street at the Hudson River was to be the official depot for all animals dying within the city limits south of 50th Street. The contracting firm agreed to maintain a clean establishment, to keep several offices to which dead animals could be reported, and to remove all dead animals within twelve hours after notification.9 Trouble developed immediately. The firm was accused repeatedly of failing to remove carcasses immediately upon notification. During the next two years the Common Council enacted a series of amendments to the original ordinance seeking to eliminate loopholes, but the subject remained a major public issue. 10

The problem of dead animals soon became involved in the even greater problem of removing offal. The rapidly growing population led to a sharp increase in the number of slaughterhouses and butchering establishments, which, in turn, encouraged the growth of fat and bone-boiling companies. Despite protest after protest from nearby residents, bone boiling continued to flourish. The Common Council, always reluctant to limit private enterprise, refused to act. Outraged citizens then sought relief through the courts, and in three cases juries ruled that slaughterhouses, fatmelting, and bone-boiling businesses were public nuisances. In 1846 Mayor W. F. Havemeyer, noting this judicial action, called unsuccessfully upon the councilmen to assume their responsibilities.¹¹ Three years later one of his successors appealed for the establishment of municipal abattoirs on the banks of the rivers. No effective relief was provided until the Asiatic cholera epidemic of 1849 led the Board of Health to take stern measures. 12

Driving these firms out of the populated areas, however, only intensified some of the existing nuisances. According to a subsequent report by one of the city inspectors, the offal and refuse which had formerly supplied raw material for the bone boilers was now left in the streets and markets or else dumped into the river from the nearest dock. The result was that dead animals and offal of all types simply accumulated in the slips and on the shores of the city and adjacent islands. By the spring of 1850 so many

complaints had been registered that the Common Council sought without success to establish dumps in Westchester, Long Island, and New Jersey, Despairing of any other solution, the Council finally decided to let private contractors handle the matter. 13 The magnitude of the problem at this date was outlined by Mayor C. S. Woodhull in a report to the Board of Aldermen in December of 1850. He quoted Police Department figures showing that there were 206 slaughterhouses, 11 public markets, and 531 private markets or butcher shops; "in other words," he wrote, "seven hundred and forty-eight places in each of which there is generally a greater or less amount of animal matter, undergoing decay, and having more or less tendency to vitiate the atmosphere." No fewer than 375,000 animals were slaughtered annually, he added, and another 5,000 died of natural causes.¹⁴ The Common Council responded the following January by vesting complete responsibility for the collection of offal in the hands of the City Inspector. City Inspector A. W. White gave the contract to Baxter, Brady, Lent & Company, a firm in which he and the Street Commissioner had an interest 15

A year later the contract was transferred to Reynolds & Company, a firm in which a good many city officials had an interest. According to the Daily Tribune, Revnolds & Company was given a five-year contract at the rate of \$60,000 a year, a sum considerably in excess of what the first company had received. The political chicanery involved in the contract was clear, the Daily Tribune declared, since several individuals had offered to remove the offal free or to pay for the privilege of taking it away.16 The accusations made by the Tribune were borne out by testimony heard by the Common Council's committee on public health in June of 1853. By this date the Reynolds contract had become a major issue, for City Comptroller Flagg had refused to pay a bill presented by Reynolds. Flagg, in conjunction with the district attorney, had conducted an investigation, and the two officials had decided that the contract, which among other things had never been advertised for bids, was invalid.¹⁷ The committee on public health, which conducted hearings on the Reynolds contract, heard Samuel Garrison testify that he had offered to remove the offal and refuse free, John Green state that he would pay \$50,000 for the privilege of removing it, and a member of the firm which had previously done the work assert that Reynolds would easily net \$80,000 a year from his contract. Another witness declared that much of the refuse was simply dumped from the docks, despite the stipulations in the contract against this practice. In the face of this damning testimony, the committee recommended that Reynolds be paid.¹⁸

Undaunted by his failure, in February of 1854 Comptroller Flagg presented another remonstrance against the Revnolds contract. Once again the committee on public health rebuked Flagg, and ordered that Reynolds be paid. With newspaper and public support, Flagg held his ground, and finally in September a compromise was reached by which the city agreed to buy up the remainder of the five-year contract for \$85,447.43. Not content with giving Reynolds this windfall, the Common Council voted to pay him another \$10,000 for his lease and facilities on Barren Island. Comptroller Flagg again stepped into the breach and managed to prevent this flagrant giveaway. Meanwhile, Reynolds filed suit against the city and the collection of offal remained at a standstill.19 As the nauscating sights and odors from the multitude of slaughterhouses and butcher shops grew worse, the newspapers intensified their campaign to force these trades out of residential areas. The Daily Times was particularly incensed over the foul odors coming from the slaughterhouses, and their practice of draining the excess blood into the street gutters.²⁰

Despite the scandal over the previous contracts, the City Inspector's Department was left in full control of letting out the new one. The public furor aroused by the Reynolds affair brought some improvement insofar as the offal contractors were concerned but many nuisances still remained. In the summer of 1856, the City Inspector pointed out that the existing regulations for slaughterhouses and butchers applied only to those establishments south of 14th Street. Almost 100 slaughterhouses were located north of this area, he said, many of which were in drastic need of cleaning. He also asked for a law to prevent butchers from throwing offal and refuse into the river and slips where it floated around the docks to the disgust of all who encountered it.²¹

One agency which often alleviated some of the worst conditions was the Board of Health, but, unfortunately, it operated only during the summer months. During the summer of 1856, for

example, it ordered the City Inspector to request a sausage maker to stop throwing entrails and refuse into the streets and to clean his place of business under threat of closure. When the City Inspector reported negligence on the part of the offal contractor in 1859, the health commissioners directed that he give notice of any dead animals to the contractor. If the latter failed to remove them within six hours, the City Inspector was to do the job and charge the expense to the contractor.²²

The summer of 1859 saw the Board of Health insisting upon the general cleansing of the city. Under the energetic leadership of City Inspector Delavan, a major drive was started against bone and offal-boiling firms and the many piggeries. The worst area, popularly known as Hog Town, was situated between 50th and 50th Streets from Fifth to Eighth Avenues. The drive early in August netted 3,000 hogs and the destruction of many boiling establishments and hog pens. Leslie's Illustrated noted, possibly with tongue in check, that many of the hogs were dragged out from under the beds of the poor.²³ The net effect was not entirely beneficial, since the city found itself faced with higher costs for removing offal and garbage. The City Inspector estimated that the destruction of the piggeries had increased the daily collection of offal by 50 to 100 tons. The offal contractor, who was receiving \$9,000 per year, immediately asked that his pay be increased to \$12,000. The City Inspector also noted that although bone and offal boiling had been stopped, fat boiling, which he described as causing a pestiferous gas and a noisome stench, still continued, and he recommended that both be forbidden on Manhattan Island.24

During the early 1860s the Mayor and City Inspector repeatedly called for the substitution of municipal abattoirs in the place of the over 200 slaughterhouses scattered throughout the city. Answering charges that slaughterhouses were a health menace, Thomas F. DeVoe, a highly respected city butcher, read a paper in June of 1865 before the Polytechnic Branch of the American Institute in which he argued that slaughterhouses did not produce disease. Neither cholera nor yellow fever, he said, had ever been associated with these firms, and experience had shown that the city wards with the highest death rates from cholera were those with the least number of slaughterhouses. He argued further that individuals with sickly constitutions often benefited from work-

ing in these places. As to the objections about the odor, he declared, "what is a pleasant odor to one is intolerable to another." Yet DeVoc himself was a staunch advocate of large municipal abattoirs and constantly urged that the slaughterhouse regulations be stringently enforced.²⁵

Occasional efforts were made to force slaughterhouses and butchers to clean their premises, but the first effective drive was made by the Metropolitan Board of Health in 1866. Whatever the validity of Mr. DeVoe's arguments, esthetics were against him. Eventually public pressure and improved technology gradually eliminated the worst abuses in the meat establishments. By the time the Metropolitan Board of Health was established, most of the bone, offal, and fat-boiling places had been forced beyond the city limits, and the new health board was able to bring this source of annoyance under control.

Manure piles and stables were another perennial source of complaint. An early attempt to solve this difficulty was an ordinance passed in 1830 which provided that no manure deposits could be established at any place south of 28th Street except by permission of the ward alderman or assistant alderman,26 This permission seems to have been easily secured. City Inspector Archer, in his report for 1845, spoke of the many manure piles "poisoning the air with fetid exhalations, breeding myriads of flies and other insects and rendering residences in their neighborhoods almost intolerable, besides which," he added, "they are made the common receptacles for offals of every description, dead animals, &c., &c."27 The many regulations respecting manure heaps were no easier to enforce than the other sanitary ordinances. In 1850 City Inspector A. W. White claimed that when he sent men and carts to remove some offensive heaps, his men were assaulted by the employees of the owners and a riot ensued. He recommended removal of all manure piles from the city, a solution that was scarcely feasible so long as thousands of horses were essential to the city's transportation system.28

The distilleries with their extensive dairy herds presented an equally grave problem. One distillery which maintained a herd of 2,000 cows was finally investigated as a public nuisance by a grand jury. A barrage of testimony was given as to the foul and filthy conditions in which the cows were kept, but the grand jury gave

the owner a chance to clean up his place of business, made a cursory inspection, and blandly gave it a clean bill of health.²⁹ As will be seen later, the major attack against distillery cows was made on the grounds that the so-called swill milk was a danger to the health of children.

The traditional objections to the innumerable animals roaming the city streets not only continued during these years, but were probably exacerbated by the influx of Irish and other immigrants. Repeatedly resolutions were introduced into the Common Council asking for the enforcement of the stock laws.³⁰ Sometimes the resolutions were tabled, on other occasions they led to a temporary crackdown. In 1831 a motion was made to prohibit cows from straying through the streets. It failed to carry when an alderman explained that these cows were "the entire support of some of the poorer classes in the upper wards," and that the animals were dependent upon garbage for their food. The following year, however, the Council reversed its decision-probably feeling secure in the knowledge that the law would not be enforced.31 Another ordinance in 1839 specified that no swine or cattle could go abroad in the Lamp or Watch District (south of 14th Street), nor could more than three pigs be kept in any one sty. By implication, the law did not apply to the area north of 14th Street, and the evidence indicates that it was not enforced even in the district to which it did apply.32

In 1842 a newspaper editorial blamed the filthy condition of the streets in part on the presence of 10,000 hogs. Two years later the New York Sun, in commenting upon a proposed drive against loose hogs, remarked facetiously that the enforcement of the hog law would compel many large families living in one room to dispossess some of their children to make room for the pigs.⁸³ The protests against loose hogs did not bring any results until the cholera epidemic of 1849 convinced the Board of Health of the need for firm action. Although the wandering pig problem was not completely solved, the number of complaints dropped sharply in the ensuing years.

The next assault was made against the hog pens or piggeries. In 1855 a proposal to eliminate them from the area south of 86th Street led one alderman to assert that he "had been brought up in the midst of hog-styes and slaughter-houses, and there never

was a more healthy locality." Needless to say, the motion failed.³⁴ Three years later the opponents of hog pens gained a major victory when the piggeries on the West Side from 51st to 67th Streets were ordered to be closed, cleansed, and purified, and the pigs removed to the area north of 86th Street. Small pigsties (not more than three pigs) were still permitted in the city and the animals were still found at large, but by 1860 the greater majority of hogs had been removed from the streets.³⁵

One other major abuse was that of driving cattle through the streets to the slaughterhouses. An observer in 1849 described a large herd of cattle charging through the streets with a crowd of a hundred men and boys yelling in the rear. In the process, he wrote, a young boy and an elderly man had been attacked and seriously injured.³⁶ A good many petitions and resolutions were addressed to the Common Council before the members finally placed restrictions on the drovers. In 1853 a city ordinance forbade driving cattle through the streets south of 42nd Street during what was essentially the daylight hours.³⁷

Early in New York's history, ordinances requiring dogs to be muzzled or on a leash had been enacted, but the exact wording and the means for enforcing them varied from time to time. Almost every spring or summer a rabies scare touched off a campaign against stray dogs. The usual practice was to put a bounty upon strays and give the public a free hand in killing them. These efforts were often supplemented by hiring men specifically for the task. Early in the 1830s a registration law was enacted which required the licensing of all dogs. The registrar, appointed to collect the license fees, was also made responsible for killing strays. The measure proved ineffective, and a Common Council committee in 1836 recommended returning to the practice of paying a 50-cent bounty.38 A year later the committee changed its position and recommended appointing a dog registrar. In 1839 the Common Council returned to the former practice of permitting any citizen to kill loose dogs, though it directed the Mayor to appoint one or more persons as official dog killers. The ordinance did not apply to the area north of 30th Street, nor did it prohibit dogs from running loose between sunset and sunrise.39

During the next twenty years the city continued to alternate between paying an open bounty on dogs and restricting the killing to official employees. The bounty was offered only for a specific period, and it usually resulted in a general massacre of stray dogs, jarring the sensibilities of many citizens. During the summer of 1849 no fewer than 3,520 dogs were killed in the streets, leading the editor of the *Daily Tribune* to denounce what he termed "this annual bloody hunt. . . ." He described how young boys, "scarcely so tall as the far nobler and more intelligent quadrupeds they assailed, went about the streets during the Summer, staggering under clubs as heavy as themselves, striking down and then horribly mangling with many blows every dog they encountered." Despite these occasional remonstrances, the dog law remained on the books, and for the rest of this period citizens were free to kill any stray dogs. The bounty, which provided the real incentive for canocide, customarily was only offered during the summer months.

As we have seen, one of the major offenses to the sensory organs prior to 1825 had been the condition of the cemeteries and private burial vaults. After a long struggle, which was finally settled by a State Supreme Court decision in September of 1827, all burials were prohibited south of Grand Street. Repeated attempts were made to modify this ordinance, but the Common Council withstood all appeals with a surprising firmness. When the police committee fined John Bingham, a substantial citizen, \$250 for breaking the interment law, the Common Council denied Bingham's petition for a remission of the fine. As the population density increased, the Common Council gradually extended its restrictions on burials to the upper part of the city. Although the ordinances were often broken, the violations were by no means flagrant, and the guilty parties were frequently punished.

The major revision in the interment ordinances related more to the collecting of vital statistics than to any danger from the graveyards. Dr. Griscom, while City Inspector, discovered that many bodies were buried outside the city. Under the existing law no records were kept of these deaths. At his request an ordinance was passed prohibiting the removal of any body from New York City without a permit from the City Inspector's Office.⁴³ In 1859 the Mayor questioned what he called the loose manner in which the City Inspector's Office had been granting burial permits, and he called for a committee to investigate the situation.

The Mayor, following the recommendations of the health reformers, stressed that all death certificates should be signed by a trained physician. Although the Potter's Field was an occasional trouble spot, the graveyards and private vaults appear to have been kept in relatively good condition. The only issue of any consequence, as mentioned above, related to the collection of vital statistics. In this case, the Common Council acted with unusual good sense, and enacted fairly intelligent measures. That these ordinances were difficult to enforce does not detract from the good intent of the Common Council. The fact that so many burials were taking place outside the city shows that most New Yorkers had acquiesced with the municipal policy of barring interment in populated areas.

In glancing back through the preceding pages it will be seen that some of the worst abuses were rectified by the 1860s. Yet cleanliness is a relative term, and rising living standards led to more rigid criteria. The middle and upper classes, who determined the tone, were living far more graciously, but whether the benefits of industrialization were filtering down to the crowded masses in the tenement areas is another question. Certainly the rising population density intensified sanitary problems and made their solution more difficult. Despite all improvements in the preceding forty years, the Council of Hygiene, after its sanitary survey in 1864, listed among the special nuisances in New York: filthy streets, neglected garbage and domestic refuse, faulty sewers and drains, cattle pens and large stables in populous areas, filthy markets, cattle and swine in the streets, bone-boiling and fat melting establishments, manure dumping grounds and dead animals in the streets.45 It may be just as well that we cannot fully recreate the atmosphere of old New York.

Notes to Chapter 16

- 1. Daily Times, June 8, 1853.
- 2. Docs. of Bd. of Aldermen, no. 18, IX, 161-67.
- 3. Ibid., 169-70; no. 16, XI, 188-89.
- 4. Docs. of Bd. of Aldermen and Assis., no. 84, II, 439-41.
- 5. Docs. of Bd. of Aldermen, no. 1, HI, 6.
- 6. Nevins and Thomas, eds., Diary of George Templeton Strong, I, 110.
- 7. City Inspector's Report, 1845, 168-70.
- 8. Docs. of Bd. of Aldermen, no. 28, V, 289.

- 9. By-Laws and Ordinances . . . Revised 1845, 75-78.
- 10. Proc. of Bd. of Aldermen, XXV, 52, XXVH, 449-50.
- 11. Docs. of Bd. of Aldermen, no. 46, XII, 771-73.
- 12. Ibid., no. 1, XVI, 20-21.
- 13. Ibid., no. 32, XX, pt. 1, pp. 590-94.
- 14. Ibid., no. 80, XVII, pt. 2, pp. 1259-63.
- 15. Ibid., no. 20, XVIII, pt. 1, pp. 319-22; no. 32, XX, pt. 1, pp. 619-20.
- 16. Daily Tribune, February 8, 1853, July 12, 1854.
- 17. Daily Times, May 31, June 13, 1853.
- 18. Docs. of Bd. of Aldermen, no. 32, XX, pt. 1, pp. 598-600, 614-15, 619, 621 23.
- 19. *Ibid.*, no. 16, XXI, pt. 1, pp. 302-07; no. 38, pp. 575-612; no. 43, pp. 757 ff.; no. 45, XXI, pt. 2, pp. 861-65; no. 49, pp. 923-24; no. 57, pp. 1745-50; no. 27, XXII, 1-6.
- 20. Daily Times, June 5, 1854.
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- 22. Reports, Resolutions, and Proceedings of the Commissioners of Health ... 1856 1859, 32-33, 444-45.
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The City Overwhelmed

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17

The Advent of Sanitary Engineering: Croton Water and the Sewerage System

The brief flurry of activity over the city water supply from 1822 to 1825 had produced a number of sound proposals, but, unfortunately for New Yorkers, little came of them. The Manhattan Company, still recognizing that the operation of a water system for the city was essential to maintaining its lucrative banking privileges, continued to render an absolute minimum of service. The quality of this service was well matched by the quality of the water supplied from its shallow wells, a water so thoroughly contaminated that it was as unpleasant to taste as it was unsafe to drink. The collapse of the Sharon Canal Company and the New York Water Works Company left the city back where it started -dependent upon the trickle of water from the Manhattan Company, whose pipes serviced but one-fifth of the city, and a large number of public wells. One senses almost wistfulness in a resolution on March 27, 1826, instructing the water committee to investigate whether sufficient water of good quality could be obtained from wells in remote Harlem Heights.1

For the next three years, the problem of the city's water supply ceased to occupy major attention—possibly a result of the city's freedom from the threat of yellow fever. Most residents continued to trudge to the nearest public well or hydrant, while those who could afford it or who lived too far away relied upon the water carts. One last-ditch private endeavor to secure water was made in 1827 when the New York Well Company was incorporated. Authorized to procure water from the high ground of Manhattan Island, the Company soon discovered that water could not be obtained in sufficient quantity and abandoned the undertaking.² Largely to combat the ever-present danger of fires, in 1828 an ordinance provided for the building of eighteen additional public

cisterns. This same year the Street Commissioner once again complained about the Manhattan Company's tearing up the city streets to lay or repair its water pipes. Judging from the tenor of the Commissioner's complaint the Company obviously felt no obligation to return the paying to its previous condition.³

The year 1820, however, saw a revival of interest in the water question and witnessed the first positive step toward a solution. Over \$600,000 of property had been destroyed by fire during the preceding year, much of it caused by the crippling shortage of water. In his annual address on January 5, Mayor Bowne stressed that an ample supply of pure water was "an object of the most vital importance to the health, comfort and safety of the City. . . . "4 In March the fire department committee of the Common Council, headed by Alderman Samuel Stevens, reported that the city was "badly supplied with water for culinary purposes, [and] for the extinguishment of fires." Since the Manhattan Company extended its water pipes only where it was profitable, much of the City was completely dependent upon wells. The problem was particularly acute in the upper regions of the island above Grand Street; here the residents, who had better quality water than that offered by the Manhattan Company, refused to join the system. Few pipes had been laid, and the existing cisterns did not yield enough water to effectually extinguish fires. The city had already built 40 cisterns specifically for fire-fighting, and it was felt a minimum of 60 more were essential.6

The high cost of building and maintaining cisterns led the committee to recommend that the city utilize water from the East and Hudson Rivers and construct a reservoir with distributing mains at 13th Street and the Bowery. The proposed reservoir was clearly viewed as an emergency fire prevention measure; the members of the committee concluded the time could not be "far distant" before municipal officials would have to seriously consider "introducing good and wholesome water, sufficient for all purposes, into the city." The Common Council, somewhat reluctant to entail an expense not properly chargeable to it, nevertheless pushed ahead with the committee's main proposal, and the reservoir was creeted. According to Charles King, who published an account of the Croton Aqueduct in 1843, this initial action led directly to an effective water system, "for the immense and im-

mediate advantages in cases of fire derived from this reservoir, impressed more vividly upon the public mind the far greater advantages that would result from having a river at command." This same year, with the help of Alderman Stevens, Edmond C. ("Citizen") Genêt began an unsuccessful legal attack upon the Manhattan Company monopoly. 10

During the next few years a series of petitions and resolutions were presented to the Common Council calling upon the city to assume responsibility for New York's water supply and asking for a thorough investigation of the possibility of using the Croton or the other rivers as a source of city water. A preliminary review of such probable water sources had already been authorized by the city late in 1829.11 Early in 1830, prodded by Alderman Stevens, the Common Council appointed a special committee to examine the affairs of the Manhattan Company. The Committee was specifically charged with determining if the Company had the right to shut off the fire hydrants, if it was responsible for damages to the streets, and, more significantly, if the firm had "fairly or substantially" complied with the conditions of its charter to furnish the city with a good supply of water.12 Though the ensuing report must have been highly damaging, the matter was quietly laid on the table two months later. 13 Thus was the power of a politically oriented banking institution displayed-a power that was not to be effectively challenged until New York had suffered one of the most severe epidemics of her history. Despite the Council's reluctance to act, various proposals for tapping the Passaic, Croton, and Rye Rivers were repeatedly brought before the municipal authorities and debated in the city's newspapers.¹⁴

Continuing his frontal attack upon the Manhattan Company, Alderman Stevens presented a resolution in January of 1831 bitterly castigating the corporation and asking the State Legislature to annul the Company's charter, transfer to the city government its duties for procuring water and authorize the Common Council to borrow \$2 million to finance a water system. The uncertain effect of this resolution upon the Company's banking privileges caused the alderman's motion to be tabled until February 28, when the matter was again brought up for consideration.¹⁵

At this latter Council meeting, a scathing report on the city's water supply was received from the Lyccum of Natural History

-a report which should have convinced even the most reluctant councilman of the necessity for action. The Lyceum study, a detailed, chemical analysis of water secured from both the Manhattan Company and the public wells, showed conclusively that enormous amounts of "foreign impurities" were contained in the city's water supply; 126 grains of organic and inorganic wastes were detected in the average sample compared to 2 grains of foreign substances found in the water from the Bronx River. Noting that the close proximity of several gravevards to many of the wells "communicated a ropy appearance to the water," the report felt the greatest danger arose from the daily deposit of "almost incredible" quantities of excrementitious matter—100 tons of excrement, to be exact, deposited in the sandy bank under the city every twenty-four hours.16 The Lyceum investigators did report one salutary effect of this pollution—the vast amount of stale and putrid urine found in the city's water supply precipitated the "earthy salts" and thus made much of the otherwise hard water soft. In a masterpiece of understatement, the investigators conceded, however, that "the fastidious may revolt from the use of water thus sweetened to our palate. . . . "17 Concluding, the Lyccum report forcefully restated what most knowledgeable New Yorkers had recognized for a long time, "... that no adequate supply of good or wholesome water can be obtained on this Island, for the wants of a large and rapidly increasing city like New York."18

Buttressing this report, a less learned but perhaps even more convincing argument was presented by a number of New York brewers who loudly complained that the "ill quality" of the city's water was affecting the palatability of their beer. ¹⁹ Impressed by all of this evidence, the Common Council resolved to petition the Legislature to transfer the Manhattan Company's authority to the city, but the key proposal, the section of Stevens' resolution which would have authorized the city to borrow money for the water project, was lost. ²⁰ The State Legislature, while taking no action upon this petition, recognized the growing demand for water in New York by authorizing the Mayor and Common Council to bore for water "in any street, road or public highway in the said city . . . ," and to charge the costs to the owners or occupants of the adjacent houses. ²¹

Throughout the rest of 1831 the Common Council was pres-

sured by its fire and water committee, the Mayor, and a steady flow of petitions. Impatient with speeches, reports and surveys, the fire and water committee declared on December 28 that it was time "to raise the *means* and strike the spade into the ground. . . . "22 The committee's report stated that, in its desire for profits, the Manhattan Company had never supplied pure and wholesome water and had supplied only one-fifth of the paved area with any water. The example of this Company, the report added firmly, had demonstrated that "the comforts and necessaries of life should never be placed under the control of individual associations or monopolies, ever intent to comply with so much of their charters as will make for themselves good dividends, while they generally disregard all the beneficial objects which induced the Representatives of the People to create their incorporations."23 After considering the various alternatives, the committee recommended bringing water from the Bronx River, a project which it estimated would cost about two million dollars.24

In February of 1832 the Common Council finally agreed to petition the Legislature for permission to raise the necessary \$2,000,000. This latter body was reluctant to act unless assured that the sum would cover all costs, and the matter rested for another year. In the meantime, the city continued to support efforts to find water on Manhattan, all of which proved futile.25 During the summer of 1832 the first great cholera epidemic ravaged New York City, giving a sharp impetus to the demands for an adequate water supply. The joint committee on fire and water, as a direct result, asked that Colonel DeWitt Clinton be authorized to examine the feasibility of bringing water from the Croton River. On December 22 he reported that it could be done at an expenditure of about \$2,500,000. He noted that the Manhattan Company's reservoir held less than 600,000 gallons and that the Company had laid only about one mile of pipe per year during its existence.²⁶ On February 26, 1833, the State Legislature, reacting to the cholera epidemic, passed an act providing for the appointment of five commissioners to investigate the possibilities of securing water. Seeing the handwriting on the wall and having been assured that its banking privileges would not be affected, the Manhattan Company offered on October 7 to sell its water system to the city. The fire and water committee, to which this offer was referred, recommended deferring a decision until the Legislature had acted upon the city's request to establish a municipal water works. Significautly, although the Manhattan Company had been operating for over thirty years, its assets included only 25 miles of wood pipes and 14 of iron.²⁷

On November 12 the water commissioners summarized the findings of all previous studies and recommended the Croton River as the best source for the city water supply. Estimated costs for bringing it to New York ranged from \$4,718,197 to \$5,827,237, depending upon the route selected. Accepting this recommendation, the Common Council drafted a tentative law and submitted it to the Legislature.²⁸ On May 2, 1834, a revised version of the Council's draft was enacted. It authorized the Governor to reappoint five water commissioners who were to draw up a specific plan for an aqueduct and water system. If the plan was approved by the Council, it was to be submitted to the voters. Upon a favorable vote, the Council could then raise the money and push ahead with construction.²⁹

Spurred on by a renewed cholera epidemic in 1834, the water commissioners wasted no time, and in February of 1835 submitted a concrete proposal for bringing Croton water to New York at an estimated cost of about \$5,500,000. In arguing for the early adoption of the water commissioners' recommendations, the fire and water committee pointed out that Philadelphia, with a good water supply, had largely escape the effects of the 1834 cholera epidemic. The Council, acting with unusual dispatch, accepted the proposal and called for a referendum on April 14, 15, and 16. Although there was still considerable opposition, the vote was decisive, 17,330 in favor and only 5,963 opposed. 30 The sense of urgency in these months was heightened by the "Great Fire" of 1835, which gutted thirteen acres, destroyed hundreds of buildings, and dramatized the inadequacy of the existing water system. New York officials had debated the issue for years, but it took the twin forces of fire and pestilence to secure action.

Ironically, the three wards which voted against the proposal included many of the poorest people, precisely those who stood most to gain from an adequate water supply. The *Evening Post* had warned that attempts were being made "to excite the opposi-

tion of the poorer classes" who were being told that they would have to pay most of the cost of the water system. The Board of Assistant Aldermen, however, countered by ordering that 400 gallons of water be brought from the Croton River to provide free samples at the polls.³¹

In the meantime, the city had already entered negotiations for purchasing the water system of the Manhattan Company. Shortly after the election, the Common Council instructed the water commissioners to begin construction immediately and proceeded to float a loan of \$2,500,000. The first chief engineer was David B. Douglass, but he was succeeded in October of 1836 by J. B. Jervis. From the start the project was plagued with difficulties—property owners demanded exorbitant prices for the right of way, and the Irish laborers rioted, but the work was pushed steadily ahead. The original estimate of costs proved far too low, and in 1838 the city was authorized to raise another \$3,000,000, two years later an additional \$3,000,000, and in 1841 a further \$3,500,000. By the time the project was finished, the total expenditures amounted to over \$11,450,000.³²

As this tremendous engineering project neared completion, New Yorkers thrilled with pride and a constant stream of citizens journeyed to watch the progress of the reservoir and aqueduct. During the summer and fall of 1842 three major celebrations were held. The first came on June 27, when the new reservoir was officially opened. "Omnibuses, cabs and carriages of all shapes and dimensions through every thorough fare," one participant wrote, "and thousands unable to obtain conveyances of any sort crowded the way on foot."33 The holiday of July 4 served as a second occasion for celebrating its completion. These first two, however, were minor in comparison with the final official opening on October 14, 1842. The day was marked by parades, fireworks, music, the ringing of church bells, and innumerable orations. Philip Hone, a former mayor, wrote in his diary on October 12: "Nothing is talked of or thought of in New York but Croton water; fountains, aqueducts, hydrants, and hose attract our attention and impede our progress through the streets." After commenting that political spouting had given way to water spouts, he declared: "It is astonishing how popular the introduction of water is among all classes of our citizens, and how cheerfully they acquiesce in the enormous expense which will burden them and their posterity with taxes to the latest generation."³⁴

As the Aqueduct and reservoir were nearing completion, on August 5, 1840 the Common Council created a temporary water agency, known as the Croton Aqueduct Department, to provide for distributing water within the city.35 Two years later, an ordinance established the Department on a permanent basis. The water commissioners, who were appointed by the Governor, remained in charge of the Aqueduct from the Croton River to the Aqueduct bridge spanning the Harlem River, while the water works and distribution system was placed under the city's Croton Aqueduct Department. This latter agency was placed under the administration of a board of commissioners, consisting of five city residents appointed by the Common Council. To prevent pollution of the reservoir, the ordinance forbade bathing or depositing of any form of rubbish or dirt in the water. 36 Even before water started flowing into the reservoir, citizens were urged to connect their homes to the water lines. The Tribune commended the authorities for a good job of laving water pipes and warned residents against using connecting pipes made of lead. Articles about lead poisoning occasionally appeared in the newspapers and medical journals during these years, and the public was constantly urged to use tin-coated pipes.37

Although the introduction of the water had been hailed as a major triumph, its benefits were limited for the first few years. The commissioners first charged \$20 for connecting buildings to the water lines and proposed a \$10 annual water fee. The *Tribune* was critical of these fees and suggested that every building be connected with the water system at public expense, since it felt that high installation costs would discourage the consumption of water. Tribune was correct in its assessment, and the water department revenues rose very slowly during the early years. The first full year of operation netted only \$84,000; five years later the total return was only about a quarter of a million. Following the reorganization of the water department in 1849, a strong effort was made to encourage the use of Croton water, with the result that the annual revenue almost doubled the following year.

A period of steady growth ensued, and by 1865 the annual income of the water department was almost a million dollars.³⁹

The use of city water afforded a fine opportunity for politicking, as the City Fathers, in fulfillment of their promise to bring good water to all citizens, voted to install free hydrants in locations designated by individual councilmen. Soon the cry of favoritism was raised. The editor of the *Commercial Advertiser* was outraged over the excessive number of hydrants in some streets and the absence of them on others. A large section of the Sixteenth Ward, he declared, had neither hydrants nor pumps, and women and children were compelled to carry the water hundreds of yards. The Sixteenth Ward, however, was a fairly well-to-do area which generally voted Whig. It is possible that the Democratic wards fared better in the distribution of water hydrants.

Since the water was pumped directly from the reservoir into the city pipes, foreign substances occasionally were found in the water. A correspondent in 1846 asserted that the newspaper stories about the need to filter the water were intended to promote the sale of "filtering machines." The editor of the *Tribune* took issue, pointing to the need for removing small fish, decayed vegetable matter, and other substances.⁴¹ In the spring of 1848 Professor James Renwick of Columbia College added his voice to those advocating home filters. In the succeeding years various small devices which could be attached to faucets became quite popular and were frequently advertised in the newspapers.⁴²

After years of carefully husbanding their inadequate water supply, New Yorkers went to the opposite extreme with the introduction of Croton water. From the beginning responsible officials complained of the needless waste of water. The first annual report of the Croton Aqueduct Department noted that hydrants opened by unauthorized persons were running continuously and greatly reducing the water pressure. This carelessness, the report explained, prevented many persons living in upper stories from receiving the water for which they had paid.⁴³ The needless waste of water was to become a constant theme in the Department's reports, one that still resounds today.

As the flow of city water steadily increased, it became obvious that the sewerage system was inadequate. On April 11, 1849, the

State Legislature, at the request of the Common Council, passed a law reconstituting the Croton Aqueduct Department. In place of the board of water commissioners chosen by the Governor, it substituted a three-man commission appointed by the Mayor with the approval of the Common Council. This commission, which was to include an engineer, was given complete charge of the Aqueduct and the city water system. In addition to the entire water system, the Department was also assigned responsibility for constructing, repairing, and cleaning all sewers and drains.⁴⁴ The story of New York sewers will be treated separately; suffice it to say here that under the direction of the Croton Aqueduct Department, the construction and maintenance of sewers was greatly improved.

Considering the general corruption and inefficiency in municipal affairs during these years, the Croton Aqueduct Department was operated with surprising efficiency. From 1849 onward the water pipes were steadily extended through the city streets and more and more buildings were connected to the water lines. In June of 1850 the Department called for the erection of a third reservoir to meet the rising demand for water. While the Common Council was mulling over this request, the public statements of city officials and newspaper editorials continued to express satisfaction with the management of the water system, although they joined with the Croton Aqueduct Department in condemning the excessive waste of water. The street-cleaning department was pinpointed as one of the worst offenders. For the sweepers and contractors, opening up the hydrants was a simple way of removing dirt and rubbish. Unfortunately, the savings affected by the contractors were more than paid for by the city in terms of the amount of water used and the expense involved in cleaning out the blocked sewers.45

The appeals for a new reservoir finally brought action in 1852, when the Aqueduct Department received permission to construct a reservoir extending from 86th to 96th Streets between Fifth and Seventh Avenues. The Department immediately ran into difficulty trying to purchase land, but with the help of a state law in June of 1853 the work got under way.⁴⁶ Progress was further impeded by political interference. In its 1853 report the Department

noted that although the 1849 law had given it the right to make all contracts, the phrasing of the law read that "the Common Council shall prescribe rules and regulations for the government of said Board [Department], in respect to proposals and contracts."47 Using this wedge, the report said, the Common Council had usurped much of the power with respect to contracts. One of the worst abuses was that of excusing defaulting contractors from penalties. The Department encountered similar difficulties in trying to enforce the ordinances against the excessive use of water during street-cleaning operations. The enforcement of these laws was so lax, the water department's report in 1854 asserted, that the offenders were surprised and outraged when the department officials attempted to levy fines. Speaking of the contract problem, one report declared tartly that the water department could "doubtless have succeeded in reducing this matter of contracts to something of order, system and efficiency if its exertions had not been paralyzed by influences beyond its control."48

A measure of the success of the water department is to be found in the gradual extension of its responsibilities. Partly as a result of its obligations with respect to water pipes and sewers, in 1857 the job of street paving also was turned over to the Croton Aqueduct Department. The Department had already been given full authority over wells, pumps and cisterns, and by 1859 its responsibility was further extended to include supervising the construction of all new vaults and cisterns. The close relationship between water and sewerage undoubtedly would have brought a unified administration for the two departments, but the efficiency of the Croton Aqueduct Department certainly hastened this development.

Although the municipal ordinances against wasting water were clear and comprehensive, the laws were always difficult to enforce. By 1860, however, a small enforcement group known as the water police had been created. Their duties included checking the water connections on all new buildings, inspecting water lines and pumping stations, and reporting all violations of the laws relating to the use of city water. The casual disregard of the laws to save water which characterized New Yorkers even at this early date and the tendency of the courts to dismiss all charges must

have made the task of the water police a frustrating one indeed. Nevertheless, they were a visible symbol of authority, and as such they may well have limited the abuses.

In the 1860s the water department, influenced by the sanitary reform movement, increased its rate of expansion. Late in 1862 an additional reservoir was completed in Central Park, and the Department asked for authority to erect still another. A state law authorized the Croton Aqueduct Department to acquire title of land north of 170th Street and to raise \$300,000 for this new reservoir. A site was selected between 172nd and 175th Streets, extending from Tenth Avenue to the Harlem River. The city's three existing reservoirs, two in Central Park and a distributing one on 42nd Street, were already placing a heavy demand on the Croton River. Realizing this, in January of 1864 the Department asked for authority to move ahead with a storage reservoir in the Croton Valley. The following year the Legislature passed an enabling act permitting the acquisition of land in Putnam and/or Westchester Counties for this purpose. 52

In view of the universal agreement among all observers on the general corruption and inefficiency of the New York City government, it is refreshing to read the felicitous comments about the Croton Aqueduct Department. Possibly the most significant praise can be found in the Sanitary Survey made by the Council of Hygiene and Public Health in 1864. This searing indictment of New York's social and health conditions had only kind words for the water system. It was described as one "which excels that of any other city of equal population upon the globe, and which for years past has exerted a most direct and important influence in protecting the inhabitants from the general prevalence of typhoid infections and diarrhoeal diseases." The "universal distribution and abundant supply" of Croton water, the report declared, is regarded "as the chief agency of sanitary protection which the city enjoys,"53 For generations New Yorkers had suffered from a want of a satisfactory water supply. Tapping the Croton River was a major engineering accomplishment; more than this, it showed that civic leadership in New York City, once the gravity of a problem was recognized, could supply vision and imagination in solving it.

Notes to Chapter 17

- 1. M.C.C., 1784-1831, XV, 301.
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- 3. M.C.C., 1784-1831, XVII, 341, 539-40.
- 4. Ibid., 561.
- 5. American, March 14, 1829.
- 6. Ibid.; M.C.C., 1784–1831, XVII, 723–26.
- American, March 14, 1829; Charles King, Memoir of the Croton Aqueduct (New York, 1843), 104-105; Wegmann, Water-Supply, 15-20.
- 8. M.C.C., 1784-1831, XVII, 724-26; American, June 30, 1829; King, Memoir of the Croton Aqueduct, 105; Wegmann, Water-Supply, 15-20.
- 9. King, Memoir of the Croton Aqueduct, 106.
- Beatrice G. Reubens, "Burr, Hamilton and the Manhattan Company," Political Science Quarterly, LXXIII (1958), 100-25.
- 11. M.C.C., 1784-1831, XVIII, 189, 357, 394, 465-66; American, December 15, 1829.
- t2. M.C.C., 1784-1831, XVIII, 604.
- 13. Ibid., XIX, 89.
- American, September 7, 1830; King, Memoir of the Croton Aqueduct, 106.
- 15. M.C.C., 1784-1831, XIX, 459-60.
- 16. Ibid., 520-22; King, Memoir of the Croton Aqueduct, 107-10.
- 17. King, Memoir of the Croton Aqueduct, 108-10.
- 18. Ibid., 110.
- 19. M.C.C., 1784-1831, XIX, 497-98.
- Ibid., 497-98, 520-22; Evening Post, February 15, 18, March 1, 1831;
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- 21. N.Y. State Laws, 54th sess., chap. 158, April 18, 1831, p. 197.
- Does, of Bd. of Aldermen and Assts., I, 1; Proc. of Bd. of Aldermen, I, 33, 50-52, 112-16; Evening Post, May 25, 1831.
- 23. Docs. of Bd. of Aldermen and Assis, 1, 2-3.
- 24. Ibid., 4-16.
- 25. Proc. of Bd. of Aldermen, II, 69-85, 90 98, 119 24, 271-72.
- 26. Ibid., III, 248, 267-68; Docs. of Bd. of Aldermen and Assts., no. 61, II, 195-98, 245, 261-62; Wegmann, Water-Supply, 20-23.
- 27. N.Y. State Laws, 56th sess., chap. 36, February 26, 1833, pp. 35-36; Docs. of Bd. of Aldermen and Assis., no. 27, III, 149-50; no. 49, pp. 501-03; King, Memoir of the Croton Aqueduct, 115-20.
- 28. Does, of Bd. of Aldermen and Assts., no. 36, III, 357-73; no. 45, pp. 449-52.
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- 30. Docs. of Bd. of Aldermen, no. 44, 1, 323-510; no. 45, pp. 517-2; Evening Post, March 17, 1835.
- 31. Evening Post, March 17, 1835; Docs. of Bd. of Assts., no. 50, I, 535-36.

- 32. King, Memoir of the Croton Aqueduct, 120, 139 ff., 221; N.Y. State Laws, 61st sess., chap. 127, March 29, 1838, pp. 88-89; 63rd sess., chap. 175, April 27, 1840, pp. 126-27; 64th sess., chap. 306, May 26, 1841, pp. 298-300.
- 33. Daily Tribune, June 28, 1842.
- 34. Nevins, ed., Diary of Philip Hone, 624; Daily Tribune, October 15, 1842; King, Memoir of the Croton Aqueduct, 193, 225 ff.
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- 36. Ibid., 176-84.
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- 38. Ibid., August 23, 1842.
- 39. Valentine's Manual, 1870, 686.
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- 41. Daily Tribune, August 14, 15, 1846.
- 42. Ibid., May 18, 1848, May 23, July 12, 1849.
- 43. Docs. of Bd. of Aldermen, no. 4, X, pt. 1, p. 51.
- N.Y. State Laws, 72d sess., chap. 383, April 11, 1849, pp. 537-42; Wegmann, Water-Supply, 61.
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- Docs, of Bd. of Aldermen, no. 3, XX, pt. 1, pp. 79-82; N.Y. State Laws, 76th sess., chap. 501, June 30, 1853, pp. 961-65.
- 47. Docs. of Bd. of Aldermen, no 2, XX, pt. 1, p. 48.
- 48. Ibid., 48-50; no. 2, XXI, pr. 1, pp. 39-40.
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- 50. Times, April 3, 1860.
- N.Y. State Lows, 86th sess., chap. 95, April 7, 1863, pp. 152-54; Stokes, Iconography, V, 1904, 1907.
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 p. 12; N.Y. State Laws, 88th sess., chap. 285, April 3, 1865, pp. 446-52.
- 53. Report of the Council of Hygiene and Public Health [1865], p. lii.

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Sewerage and Drainage

During the first quarter of the nineteenth century, the subject of an underground drainage and sewerage system had been thoroughly explored by several New Yorkers and had aroused considerable public interest. Men such as Edmond Genèt and Drs. Sabatier and Edward Miller had set forth the concept of a graded, integrated sewerage system, consisting of round or elliptical-shaped pipes to facilitate water flow, and the use of steam engines for pumping a continuous stream through the sewer lines. While the project was technologically feasible, it was too far ahead of the social thought of its day. In 1826 the city had a chance to use a little imaginative planning in connection with Stuyvesant's Meadow, a large, low-lying tract of land adjacent to the East River which was in the process of development. The Common Council had originally agreed to help fill in the land, but as the cost of this project rose, the Council began to consider two alternatives: an open canal or underground drains. The property owners and newspapers, convinced that raising the level of the land was the only solution, strongly opposed both alternatives. The Daily Advertiser, for example, argued that an open canal would become stagnant, putrid, offensive, and "prejudicial to the health of the surrounding inhabitants." Undergound drains were even more obnoxious, the paper declared, for those in the lower part of the city "have been the subjects of great complaint, as nuisances, almost ever since they were opened." The only sensible solution, the paper concluded, was to fill in the land.2

A large group of citizens expressed similar views in a petition to the Common Council. Over and above the fact that they were nuisances and dangerous to health, the petition declared, sewers and canals were "detrimental to the value of property for a conThe wholesale practice of filling in low-lying land was far from an ideal solution. Its immediate effect was often to stop up the natural drainage channels and cause flooding in other areas. For example, the Board of Health reported on August 17, 1826, that many cellars were flooded as a result of recent rains.4 As the work in Stuvvesant's Meadow progressed, the disruption of the natural drainage pattern caused some 343 residents to petition the Common Council, asking that it employ able engineers to devise a more practical plan of drainage. The Street Commissioner, who was asked for an opinion, strongly recommended a sewerage system for drainage purposes. He claimed that the opposition to underground drains was based upon "the improper uses which have been permitted to be made of them . . . ," and argued that properly constructed and correctly used sewers were the logical answer.5 His reference to improper usage was to the practice of institutions and private houses connecting their cesspools or water closets to the underground drains. Although forbidden by law, the practice was not uncommon. The city's determination to prevent the use of drains for any purpose other than that of surface drainage is illustrated by a Common Council resolution in 1832 authorizing the Street Commissioner to cut off any lines which the distilleries might have connected to the public sewers,6 Since it was customary for manufacturing and processing companies to discharge their waste products into the gutters, it is not easy to understand why they should not have been allowed to discharge them directly into the sewers.

Despite the objections to sewers or culverts, the only other drainage alternative was open canals. Since any open body of water quickly became a depository of dead animals, garbage, and refuse, once a canal was dug, it soon became an open sewer, offensive to the nostrils and the eyes. In time, the adjacent residents and businessmen would pressure the Common Council into covering the canal and turning it into a drain or sewer. Nearly all of the existing underground drains in New York had originated precisely in this manner. A typical illustration of this can be seen in the case of the Centre Street sewer. In 1832 a resolution adopted by the Board of Aldermen declared that Centre Street was made both disagreeable and unhealthy by the presence of stagnant water and recommended the construction of a sewer or culvert. The resolution noted the "unfounded prejudice" against culverts, but declared that it would vanish if the citizens could see how well the sewerage system worked in Philadelphia. Slowly and in a piecemeal fashion, more culverts were constructed in the ensuing years, some by the city and others by private companies or groups of citizens.

No systematic method was devised for cleaning these underground drains, and usually they were given little attention until they either became clogged or their odor aroused public concern. The residents near the Clinton Market complained in 1832 of the "loathsome effluvia" arising from the Canal Street sewer, declaring that it "must inevitably engender disease, if possible, more fatal than the Asiatic Cholera."8 Cleaning the sewers, which had to be done by hand, was always a nasty job and often a dangerous one, since the culverts were barely high enough for the workmen to pass through. Although proposals were made for disinfecting the sewers (Edmond C. Genêt recommended using the chlorates of lime and soda), most of the difficulty arose from the solid matter which congealed on the bottom.9 In April of 1832, when the danger from Asiatic cholera brought a general cleanup of the city, the Common Council resolved "to employ the Penitentiary prisoners in cleansing the public sewers."10 In terms of early nineteenth-century thinking, this was an ideal solution, since it combined salutary punishment for wrongdoers with a program to promote the city's health.

Cleaning the sewers, however, often brought special problems

of its own. In 1839 an inhabitant of the Fifth Ward stated that the local residents were "very much annoyed by the effluvia arising from the filth thrown from the Canal and Centre street sewers, upon the pavements to dry." He declared that the problem was all the more acute because the privies from the Halls of Justice emptied into these sewers, and he demanded to know whether the property owners should "suffer such use to be made of these sewers by the Corporation." According to the sanitary laws, the city had no business using the sewers or drains to dispose of excrement. A tentative approach to the problem of the odor arising from the sewers was made in April of 1832 when the Common Council ordered the Street Commissioner to make two "stench traps" in the sewers. How effective these traps proved is not clear; the complaints, however, still continued.

For the next ten years New Yorkers were preoccupied with obtaining a water supply, and the question of sewerage and drainage slipped into the background. When flooding became acute or stagnant pools became a nuisance, the low-lying areas were filled in by the City Inspector's Office or else the Street Commissioner might urge the property owners to join together in building a sewer. This haphazard expansion of water and sewerage is indicated by the fact that a water main was placed across the Canal Street sewer only two feet six inches from its bottom, thus effectively impeding drainage.¹⁴

During this discussion of sewers and drains, it should be borne in mind that the city had no real sewer system as such. Water closets were expensive to build and maintain, and privies of one sort or another were in general use. Owners of large homes or buildings usually built sinks or cesspools, while the better smaller buildings had privies with removable tubs. These latter were emptied at night by men known as scavengers, who were also responsible for cleaning sinks and cesspools. A maze of regulations surrounded the construction and cleaning of privies, sinks, and cesspools, but most of these were more honored in the breach than in practice. The laws specified that privies and cesspools could not be constructed within 30 feet of any public well or pump, and prescribed the level to which their contents could rise. During the summer months, cesspools could not be emptied without special permission, and the covered tubs from privies had to be removed

only between 11 P.M. and 3 A.M. Excrement could not be cast from any pier, wharf, or dock south of 14th Street.¹⁵

While it is safe to assume that esthetic considerations would assure a general conformity to the laws in the middle and upperclass neighborhoods, this could scarcely have held true for the tenement areas. The result was that sinks, cesspools, and privies constantly overflowed, and the courts, yards, and alleys became so bad as to almost defy description. In the case of large buildings, even well-regulated cesspools were frequently offensive. Water closets had been constructed for many years, but their general use was impractical until ample and cheap water was available in the late nineteenth century.

The opening of the Croton Aqueduct in 1842 brought the issue of drainage and sewerage sharply to the fore. The elimination of many cisterns and wells tended to raise the ground water level, while at the same time the Aqueduct brought thousands of gallons daily into the city. Water consumption for all purposes rose sharply, but the most significant change came in the wider resort to water closets. Alderman Gale was the first councilman to recognize that the Croton water had made a comprehensive sewerage system feasible. As a first step he proposed on July 1, 1844, that water closets be connected to the sewers or drains. Where water supplies were abundant, he said, the use of sewers to carry off the contents of cesspools and water closets had been found "greatly to promote the health and comfort of the inhabitants."16 In reply to those who argued that the effect would be to empty the contents of privies into the slips, he answered that sewers should terminate at the end of the piers where the current could carry away all noxious substances. The alderman also pointed out that it was possible to ventilate properly built sewers and that the available Croton water was more than enough to flush the sewers. Under the existing system, he continued, there was no good way for ventilating the outhouses whose contents were collected in about 35,000 sinks. Not more than 5,000 of these were cleaned annually, he added, and when the cleaning was done, the contents were usually dumped into the slips or from the docks.17

While the Common Council was considering the resolution, the newspapers seized upon the issue and began a campaign to enlighten the public. In October the New York Sun repeated some of Alderman Gale's arguments, adding that if all sinks were cleaned annually, the bill would amount to \$350,000 per year. "But only a few are properly attended to," the editorial continued, "while very many are permitted to remain year after year, breeding death and disease in the neighborhood."18 A complete sewer system would cost each lot owner about \$1.80 annually, a cost which the Sun felt would be more than repaid by the savings in doctors' bills, and in the improved health and comfort of the citizens. The Sun concluded by recommending that the cost of sewers be apportioned among the owners of adjacent lots. In a subsequent editorial, the Sun cited the case of the City Hospital, which had applied for permission to construct a sewer to the Hudson. When the Common Council failed to issue a permit, the Hospital had been forced to build a large cesspool which was "exceedingly offensive to the neighborhood and injurious to health."19 The journal particularly condemned the use of cesspools by large institutions, and pointed out that the Toombs (the city prison) was the only one with its own sewer line.

Fortunately for New York, British sanitary engineers had been making rapid advances in solving sewerage problems, and their work was eagerly watched by American leaders. The example of London was frequently cited by newspapers and civic leaders. Particular emphasis was placed on the success of the British in reducing the incidence of epidemic diseases through improved water and sewerage systems. Alderman Gale, in his petition to allow the use of drains to carry away sewage, specifically cited the excellent health results achieved by London in this area. Philadelphia, too, was another example to which New York reformers often pointed.²⁰

Not quite sure what to do with Alderman Gale's proposal, the Common Council turned it over to the committee on roads and canals. In November a motion was introduced to amend the city ordinances so as to give the Street Commissioner discretionary power over connecting water closets to the city sewers, provided an ample water supply was available. Reflecting the Council's uncertainty as to the jurisdiction of such matters, the resolution was referred to the Croton Aqueduct Committee.²¹ At the end of the year, another advocate spoke strongly in support of a sewerage system. In his annual report for 1844 City Inspector Eli Leavitt

stated that several important subjects had been debated in connection with the city's health during the past year, but in his opinion the most important of these was sewerage. He urged a comprehensive plan to replace the existing haphazard and imperfect method of construction. All new sewers, he wrote, should be elliptical in shape and large enough for a person to walk through. He mentioned several streets in which the residents had united to build private sewers. While he commended the citizens and considered their efforts beneficial, he felt that an integrated sewerage system could not be built piecemeal. He called for a removal of the restriction against connecting water closets to the sewers, and he argued that an effective sewerage system would afford a means of removing street sweepings. It would not only reduce the heavy street-cleaning costs, he said, but would dispose of the huge quantities of filth "which are constantly engendering disease. . . . "22 A group of prominent citizens asked John B. Jervis, the chief engineer of the Croton water works, several questions about the value and practicability of a sewerage system. His response was strongly affirmative; the introduction of Croton water had made action imperative, and, he declared, "sewerage is the only remedy."23

The first step came on April 3, 1845, when the Common Council amended the sanitary law to permit the owners of privies or water closets to connect them with the sewers. The amendment specified that the property owner was first to gain the consent of the alderman and assistant alderman in his ward and then to pay a \$10 fee to the Street Commissioner. In addition, the property owner had to obtain a certificate from the City Inspector showing that he had an adequate supply of Croton water to carry off all fecal matter.24 With the new water supply greatly stimulating the construction of sewers, many of which were private, instances of damage to water pipes became more frequent. To protect the city water system, an ordinance in the fall of 1844 required all sewer contractors to notify the Croton Aqueduct Department before starting construction or repairs. They were also made responsible for damages to the water pipes and were required to obtain a certificate from the Department, stating that the water pipes were in good shape before they could collect on their contracts.25

The division of responsibility for sanitary matters between the

Board of Health, the City Inspector, and the Commissioner of Streets was made even more complicated by the emergence of the Board of Water Commissioners and the Croton Aqueduct Department. As noted earlier, the success of the two water agencies and the close connection between water and drainage made them a logical choice to assume responsibility for sewers. In 1845 Mayor Havemeyer suggested placing the regulation of sewers under the Water Commissioners, but the Board of Aldermen's committee on roads and canals favored the city-controlled Croton Aqueduct Department.²⁶

While the Mayor and aldermen were debating the subject, in the more affluent sections of the city the construction of sewers and water closets was rapidly moving ahead. City Inspector Cornelius B. Archer was the first to recognize this disparity in the extension of the city's sewers. In his 1845 report he discussed the sewerage problem at length and diplomatically commended the Common Council for having acted "with considerable zeal." After urging the appointment of competent engineers to design and construct an effective system, he stated that it was his duty to call attention to the need for sewering "the districts where the poorer classes of our citizens 'most do congregate.' " Underground drains had proved successful in the wealthy districts where sanitary measures were least needed, and he was certain they could be extended into the poorer sections without too great a cost. To the objection that the sewer lines would become filled with solid matter, he answered that an abundant supply of Croton water introduced into all tenements would easily keep the lines flushed. Extending sewers into slum areas, he wrote, would improve public health by eliminating the "immense masses of filth lying near the surface, and the necessity of removing it in carts, at all seasons of the year."28

The following year Inspector Archer indirectly argued for a sewerage system in the course of a detailed discussion of the many sanitary problems confronting the city. He criticized the practice of dumping night soil from the docks, noting that, aside from creating a major nuisance, it was also filling up the slips. Theoretically the practice was forbidden, but the length of the New York docks and the night hours of the scavengers made it difficult to prevent them from unloading their carts into the nearest slip.

One solution, Inspector Archer suggested, was to provide scows to carry the material out into midstream or to transport it to some place where it could be processed into fertilizer.²⁹

The creation of a sewerage system was a complicated and expensive innovation, and, if the Common Council was slow in arriving at a decision, it was understandable. Many engineering details needed to be settled, and of equal importance was the question of administrative responsibility. A special committee studying the problem asked Street Commissioner Thompson to prepare a detailed survey of the city's sewers and to suggest improvements. In December of 1847 he presented a plan which divided the city into eight or nine natural drainage basins and proposed that one main sewer line serve each of these areas. To carry their effluent away from the shores, he recommended lengthening the piers so that the outlets would extend well into the main stream of the river.³⁰ The special committee also asked the Academy of Medicine to investigate and report "upon the subject of sewerage, in connection with the present and prospective sanatory condition of the City." The Academy responded by appointing a seven-man committee headed by Dr. James R. Manley. When the Academy called for a committee report in 1848, Dr. Manley asked that the committee "be discharged from the further consideration of the subject." His request was refused, but, when the same thing happened a year later, the Academy voted to dissolve Manley's group.³² The failure of the medical profession to act decisively on this matter was particularly unfortunate; it was precisely this group from whom leadership should have come.

For several years the Common Council deliberated, but the steady increase in the construction of public and private sewers and the growing number of water closets eventually forced city officials into taking action. At the Council's request, on April 11, 1849, when the Legislature eliminated the state-appointed water commissioners and gave its authority to the municipal Croton Aqueduct Department, this same Department was assigned full responsibility for the construction, repairs, and cleaning of all sewers and underground drains. The Department was, however, subject to the orders and directions of the Common Council and was required to adhere to the general sewerage plan "which has been or may be adopted" by the city. The Department was further

required to submit a general plan of construction each year to the Common Council.³³

The newly reorganized Croton Aqueduct Department more than justified the faith which had been placed in it. The rapid expansion of the city water system under its direction has already been described, and, for the first few years at least, the system of sewers showed a comparable growth. The Department was fortunate in having strong support from the offices of the Mayor and the City Inspector. On one occasion Mayor Woodhull vetoed a petition from a group of property holders wishing to construct a sewer, asserting that the Croton Aqueduct Department had sole jurisdiction over such matters. He explained that the intent of the city was to develop a coordinated sewerage program rather than to build in a piece-meal fashion.³⁴ In October of 1849 the Croton Aqueduct Department announced that no more sewers would be laid during winter because of the effect of freezing upon the mortar and cement. It also announced regretfully that private citizens could not tap the sewer lines. Three months later, the Department reported to the Common Council that the chief engineer was making a thorough survey and hoped to present a comprehensive sewerage plan by the spring of 1850.35

The zeal with which the Croton Aqueduct Department attacked its new responsibility is clear from the statistics presented in its annual reports. Whereas only about three nules of sewers had been constructed in 1849, in 1850 the figure jumped to over 11 miles. The following year the Department built 11 miles of sewers, 157 receiving basins, and 3,925 feet of culverts. For the next four years the annual amount of sewer pipe laid rose until it reached a peak of almost 14 miles in 1853 and 1854. According to Valentine's Manual, between 1849 and 1853 the Department constructed over 53 miles of sewers. Since the total length of sewers in use at the end of 1853 was just over 105 miles, it is clear that the sewer mileage doubled in a period of three and a half years.³⁶

There can be little doubt that the reorganization of the water and sewerage department and the forceful program of construction from 1849 to 1855 was closely related to the reappearance of Asiatic cholera in 1849 and to the series of fever epidemics associated with the rising tide of immigration. Urbanization was forcing municipal officials to face up to sewage and water problems,

but the recurrent waves of pestilence unquestionably speeded up the process.

Although the Croton Aqueduct Department received strong support, the sailing was not always smooth. In 1850 the Common Council proposed the elimination of the \$10 fee charged for making a connection with the public sewers. The Department, faced with heavy construction and maintenance costs, successfully protested against losing this source of revenue. It pointed out that the annual cost of cleaning a single privy amounted to \$18 a year, considerably more than the cost for connecting with the sewer lines. Furthermore, the Department maintained, a sewer connection increased the value of the property.³⁷ A far more serious difficulty came from the Common Council's interfering in the Department's dealings with contractors. In 1852 the Department stated bluntly: "So long as defaulting contractors rely upon the Common Council ... to shield them from the consequences of their neglect, or wilful violations of their several undertakings, they will continue, as now, to pay very little regard to the covenants contained in the contract, or to the remonstrances of the Department having charge of the work." The complaint went on to say that there had been more problems, "more petty annoyances . . . and more vexatious labor" in the relatively recent work of the Bureau of Sewers and Drains of the Department than there had been during the entire construction of the Croton Aqueduct. 38 Five years later the Daily Tribune, in calling for an extension of the city's sewers, praised the work of the Croton Aqueduct Department and expressed the hope that the Department would remain immune from "plundering politicians."39

The evidence indicates that the Department managed to maintain a high level of honesty, despite considerable pressure from Councilmen and unscrupulous contractors. This zeal for the public interest may well have backfired, since the councilmen, finding sewer contracts relatively unprofitable, lost interest in the subject. Other factors, too, entered into the picture, but at all events, sewer construction was sharply reduced after 1854. From 73,519 feet in this latter year, the figure dropped to 38,679 in 1855, rose slightly the following year, and then fell to an all-time low of 10,430 in the depression year of 1857. For the next seven or eight years the footage fluctuated between 20,000 and 40,000 per year.⁴⁰ At the time

when sewer construction had reached its low point, 1857, the Association for Improving the Condition of the Poor (A.I.C.P.) blamed many of the city's health problems on the inadequacy of the sewerage system. The Association asserted that only 138 miles of the city's nearly 500 miles of paved streets were sewered; thus "nearly three-fourths of the city, including some of the most densely populated and filthy portions, are unsupplied with these important hygienic accessories."⁴¹

When the New York Sanitary Association was organized in 1850, one of its first projects was to ask Egbert L. Viele, an engineer, to make a study of the city's drainage. In his report, "Topography and Hydrology of New York," Viele emphasized the need to study the natural drainage of the city and warned against the indiscriminate practice of filling in all low-lying areas without making provision for drainage. 42 In 1859 the A.I.C.P.'s Sixteenth Annual Report again discussed the issue of sewerage and drainage, quoting extensively from the testimony given by Viele and Dr. John H. Griscom before a Senate committee. Dr. Griscom had informed the Senators that New York produced 35,000,000 gallons of sewage daily. Two-thirds of this, he said, accumulated in courts, sinks, cesspools, streets, and gutters where its removal was dependent upon scavengers. The Report added that only nine miles of sewers had been built during the previous two years. At this rate, the Report noted grimly, provided the city's population remained static, it would take eighty years just to complete the job. 48

For the next few years the Croton Aqueduct Department made little progress in extending the sewer network. Well-to-do citizens who could afford private sewers were reluctant to see tax money used to provide sewers in the poorer districts, where they were most needed. Many who might willingly have paid their share were too disgusted with the wholesale political corruption to support sewerage programs. Handicapped by limited funds, the Croton Aqueduct Department could only urge the Common Council to take more decisive action. In the 1860s the Department repeatedly drew attention to the rapid development of the upper part of the city and urged the development of a comprehensive plan for drainage and sewerage. The adoption of such a plan, the Department declared, would help future property owners and would avoid "a repetition of the errors which have been found in the

grade, capacity, and outlet of many sewers now built, and which have made their rebuilding at the expense of the city unavoidably necessary."⁴⁴

In 1863 Mayor Opdyke added his voice to those demanding the systematic construction of sewers in the newer sections of the city. He cited two instances in which rebuilding overburdened or defective sewers had cost the city thousands of dollars and urged that the municipality profit from this experience. Responding to repeated requests from the Croton Aqueduct Department, the Mayor asked the Common Council to authorize the Department to draw up a sewerage program. The cost of designing systematic plans, he said, would run about \$5,000, whereas the expense of replacing one defective sewer had amounted to \$21,000. Six months later the Common Council finally authorized the survey, but made no provision for financing. The following year the sum of \$10,000 was appropriated, and late in 1864 the Department got the project under way.⁴⁵

The following January the Croton Aqueduct Department reported that it had already proposed a plan for rebuilding sewerage district number one, lying between Central Park and the Hudson River from 59th to 81st Streets. The Council, however, referred it to the committee on sewers, which quietly pigeon-holed it.46 After courteously requesting a decision, the Department then delivered a stinging rebuke to the Common Council: "Before concluding this part of our report, on a subject to which the attention of your predecessors has so frequently been called, we feel constrained to say, that the disregard of all proper principle shown in the construction of our so-called sewers, is discreditable to all who have any control over the subject." The lack of system and the increasing evils from this neglect, the Department added, were a disgrace to the city. The Department regretted that its statements cast reflections upon the Common Council, but declared that "our Department has been called upon to bear the odium of a negligence which is not its own, and to correct which it has urgently struggled in vain for years past." Having exhausted every effort to correct these evils, the Department concluded firmly, it is only right that the public should "be told plainly that the gross want of scientific knowledge, the recklessness of public expenditure, and the disregard of public health so conspicuous in our sewer constructions, are not justly attributable to the Croton Aqueduct Board [Department]."47

The stern report of the Department, coming at a time when sanitary reform was in the air, brought tangible results. On April 12, 1865, the Legislature passed an enabling act authorizing the Department to devise a sewerage plan and to put it into operation.48 At the end of the year, the Aqueduct Department reported that it had organized an efficient corps of engineers and was making creditable progress. It had, however, run into the old legal problem of securing right-of-way privileges. While the Department was hopeful, it pointed out that the task confronting it was a formidable one. Almost 200 miles of sewers were in operation, "nearly all of which have been built without regard to any system." A great deal of time, energy, and care would be necessary to "lessen the evils resulting from so many years of mismanagement," but the Department promised to do its best.⁴⁹ Reconstruction of the sewerage lines moved forward in the following years, but it was not until 1871 that the Legislature implemented the decision to build an integrated sewerage system. In the meantime, in the crowded tenement areas, the stench arising from overflowing privies, cesspools, and sinks during the summer months must have shocked the occasional visitor, and been a source of annoyance even to the hardened residents.

Notes to Chapter 18

- 1. Daily Advertiser, December 2, 1826.
- 2. Ibid.
- 3. Docs. of Bd. of Aldermen and Assts., no. 12, I, 1-6.
- 4. Daily Advertiser, August 17, 1826.
- Docs. of Bd. of Aldermen and Assts., no. 15, 1, 1-19; Proc. of Bd. of Aldermen, Il, 89, 115-16.
- 6. Proc. of Bd. of Aldermen, III, 53.
- 7. Ibid., 117-18.
- Board of Health Records, July 2, 1832, Municipal Archives and Records Center ross.
- 9. M.C.C., 1784-1831, XVI, 229.
- 10. Proc. of Bd. of Aldermen, II, 312.
- 11. Evening Post, July 15, 1839.
- 12. Ibid.
- 13. Proc. of Bd. of Aldermen, II, 335, 363,
- 14. Does. of Bd. of Aldermen, no. 26, X, pt. 1, pp. 329-35.

- By-Laws and Ordinances. . . . Revised 1845, 330-32, 355-58; Board of Health Records, January 7, 1833, Municipal Archives and Records Center niss.
- 16. Docs. of Bd. of Aldermen, no. 7, XI, 127-28.
- 17. Ibid., 128-32.
- 18. Sun, October 11, 1844.
- 19. Ibid., November 21, 1844.
- 20. Docs. of Bd. of Aldermen, no. 7, XI, 128 29; Sun, November 21, 1844.
- 21. Proc. of Bd. of Aldermen, XXVIII, 16-17.
- 22. City Inspector's Report, 1844, 676-80.
- 23. Commercial Advertiser, January 4, 1845.
- 24. By-Laws and Ordinances. . . . Revised 1845, 525-26.
- 25. Ibid., 189-90.
- 26. Docs. of Bd. of Aldermen, no. 22, XII, 395-407.
- 17. City Inspector's Report, 1845, 164-65.
- 28. Ibid., 165-66.
- 29. Ibid., 1846, 404, 409-10.
- 30. Daily Tribune, December 7, 1847.
- N.Y.A.M., Minutes, October 6, 1847, pp. 70-71.
- 32. Ibid., 71, 75, 124, 166, 182.
- 33. N.Y. State Laws, 72nd sess., chap. 383, April 11, 1849, pp. 537-42.
- 34. Daily Tribune, October 16, 1849.
- Ibid., October 23, 1849; Docs. of Bd. of Aldermen, no. 2, XVII, pt. 1, pp. 36-37.
- Docs. of Bd. of Aldermen, no. 81, XVIII, pt. 2, p. 1449; no. 1, XXIX, 104–105; Valentine's Manual, 1854, 226.
- 37. Docs. of Bd. of Aldermen, no. 61, XVII, pt. 2, pp. 1005-08.
- 38. Ibid., no. 29, XIX, pt. 1, pp. 770-71.
- 39. Daily Tribune, April 4, 1857.
- 40. Docs. of Bd. of Aldermen, no. 2, XXIX, 104 05.
- 41. A.I.C.P., Fourteenth Annual Report, 1857, 25.
- 42. Reports of the Sanitary Association of the City of New York | 1859|, 33-30.
- 43. A.I.C.P., Sixteenth Annual Report, 1859, 47-53.
- 44. Docs. of Bd. of Aldermen, no. 2, XXVIII, pt. 1, pp. 25-26; no. 2, XXIX, 39-40.
- 45. Ibid., no. 1, XXX, pt. 1, pp. 21-24; no. 3, XXXII, pt. 1, pp. 19-20.
- 46. Ibid., no. 3, XXXII, pt. 1, pp. 20-22.
- 47. Ibid., 22-25.
- 48. N.Y. State Laws, 88th sess., chap. 381, April 12, 1865, pp. 715-17.
- 49. Does. of Bd. of Aldermen, no. 2, XXXIII, pt. 1, pp. 15-17, 25, 30.

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Food and Market Regulations

New York City had a long tradition of regulating the sale of all foods, but meat and fish, the items most likely to spoil, were the chief concern of the authorities. Under the terms of its charter, the city was permitted to operate public markets and to license butchers and fishmongers. Meat could be sold only in the public markets by licensed butchers. The intent of the law was to guarantee quality food at a fair price. The market inspectors were responsible for preventing the sale of unwholesome food, and for seeing that the stalls and aisles were kept reasonably clean. To prevent unreasonable prices, the inspectors were also directed to prohibit forestalling, the attempt to corner the market in a particular commodity. The sale of fish was not regulated quite so strictly, probably on the assumption that spoiled fish was readily detectable.

Until the 1830s there appears to have been little criticism of the public markets, but in the following years the subject became an important item on the Common Council agenda. By this time there were 13 public markets, all located south of 14th Street. As the city expanded beyond this area, the Common Council neglected to build new markets, and unlicensed meat shops and itinerant peddlers sprang into existence. The Council was soon called upon to deal with a succession of petitions asking relief from fines assessed for selling meat without a license. At least one ordinance was passed providing for the "better regulation" of butchers and establishing a Joint Council committee to oversee market affairs, but it is clear that the number of unlicensed meat sellers was steadily growing. Though a rudimentary inspection system was in force, it was incapable of effectively suppressing illegal sales, and most

unlicensed vendors continued to operate with little fear of detection.¹

In 1835 the law and market committees jointly urged the Board of Assistant Aldermen to revise the market laws. Although the two committees recognized that the illegal sale of meat was primarily due to the lack of markets in the upper wards, the joint report carefully avoided any recommendations other than to suggest the appointment of a chief superintendent of markets.2 The market committee of the Board of Aldermen, however, took a much bolder stand and recommended the establishment of two classes of butchers: regularly licensed butchers selling from stalls in the public markets, and permit butchers who, with some limitations, could sell meat in other areas of the city. This same committee recommended the appointment of an inspector of butchers to replace the street inspectors, who had neither the time nor the qualifications for tracking down violators. The Common Council apparently had more pressing business and nothing came of the recommendations.3

In January of 1837 the market committee again called for the appointment of qualified inspectors. On this occasion the committee report asked for two superintendents of markets whose duty would be to guarantee that the public could buy "sound and wholesome provisions, at reasonable prices." Effective enforcement of the market regulations would "prevent forestalling and speculations," and the sale of food items "unwholesome or unfit for consumption." In view of rumors that meat from diseased cattle and swine had been placed on sale, the committee suggested that only qualified butchers or slaughterers be appointed to the new positions.⁴

In 1839 the issue of illegal meat sales was brought to a head by the licensed butchers. These individuals, who paid both a license fee and a fairly high charge for the use of market stalls, found themselves at a disadvantage in competing with unlicensed peddlers and neighborhood meat shops. When charges were brought against unlicensed meat sellers, the cases were tried in the local or ward courts, where it was almost impossible to obtain a conviction. The market committee of the Board of Aldermen, to whom the butchers' petition was referred, stated firmly that ward courts

had no basis for dismissing these charges, and declared that the time had come for the Common Council either to enforce the regulations or to abandon the entire system of public markets,5 In the committee's opinion, the regulations respecting weights and measures, the sale of spoiled or diseased food, and the maintenance of proper cleanliness would be impossible to enforce unless all sales were restricted to the public markets. "The health of our city is a matter of the highest consideration," the committee continued, "and the cleanliness upon which it mainly depends, and which now characterizes our public Markets, cannot possibly be preserved, if the business of dealing in all kinds of meats be diffused throughout the city." After making the final point that any change in the marketing laws would involve an injustice to those licensed butchers who had paid their fees and rented their stalls, the committee concluded by firmly opposing any relaxation of the market regulations.6 The committee's firm statement, however, had little significance. The failure of the city to establish markets in the upper wards assured public support for unlicensed butchers. Moreover, the Jacksonian concept of unfettered individualism was running counter to the principle of regulating private enterprise in the public interest.

By the early 1840s it was becoming clear that the marketing laws were virtually a dead letter. Complaint after complaint poured into the Common Council; on one hand, butchers demanded the enforcement of regulations, while on the other, private citizens and public officials urged the Council to eliminate the market laws. One alderman argued that since the laws were openly violated, it was better to repeal the market ordinance than to engender disrespect for the law,7 A special committee investigating the subject recommended a public referendum, declaring that the "restrictive features of the present market system . . . are disapproved by a large portion of our citizens, who regard those features as unconstitutional, oppressive and unjust...."8 A year later, 1841, the City Comptroller opposed a resolution to reduce the stall fees paid by licensed butchers. The butchers, he said, constituted a monopoly, and "public opinion is against all monopolies, and especially against that one concerning the meats they consume daily." Expressing what was undoubtedly a widespread viewpoint, he said: "The age has gone by, when a Market monopoly will be tolerated in this

community, and the sooner that part of the Market Law is repealed the better..."9

Petitions and resolutions continued to flood into the Common Council; special committees investigated and reinvestigated; tentative efforts were made to enforce the market regulations; and proposals were made to compensate the licensed butchers. Confronted with pressure from all sides, the Council stalled, no doubt hoping the issue would resolve itself. Meanwhile, the number of unlicensed meat shops and meat venders steadily increased. Late in 1842 the Common Council considered a motion to give more leeway to the permit butchers. After a long debate, the market laws were amended on January 20, 1843, to authorize the legal establishment by the permit butchers of meat shops outside the public markets. The major restriction upon these permit butchers was that they were not allowed to kill or dress fresh meat upon their premises. 10 The immediate effect of this law was to legalize the hundreds of small meat shops which had sprung up, and the longrange result was to turn the public meat markets into wholesale agencies.

As might be expected, the licensed butchers were outraged, and many responsible citizens, who recognized the difficulty of trying to police hundreds of small meat shops, were equally perturbed. More petitions poured into the Council, some demanding that the cost of stalls be refunded to the licensed butchers, and others urging a return to the old system. The most reasonable exposition of the arguments in favor of strict market regulations was set forth by the Board of Aldermen's committee on markets in February of 1845. This committee declared that some of the butchers had "paid thousands of dollars for stands, believing, from the assurances given, that the market laws and market regulations would be strictly enforced." In consequence, the failure of the city to live up to its obligations was both an injustice to the butchers and a breach of contract. Answering the common assertion that "the present state of public sentiment" would not permit the enforcement of market laws, the committee declared "that it was not so much in the unpopularity of the Market Laws as it was the want of vigilance and energy on the part of those whose duty it was to enforce them. . . . " Declaring further that the health of citizens was jeopardized by the multitude of meat shops, the committee asked how many officers would be necessary "to see that proper cleanliness be observed in each of these shanties?" Under the market system, experienced butchers readily detected diseased carcasses and rejected them, but who, the committee asked rhetorically, could guarantee that such vigilance would be exercised in every little meat shop. In conclusion, the committee appealed for a return to the former market system, but suggested that for convenience of the public a number of small markets be established.¹¹

However reasonable its arguments, the committee on markets was fighting a losing battle. The legalization of small private meat shops or markets in 1843 led to their rapid proliferation and to a corresponding decline in the role of the public markets. Six years later the public markets were described as "in bad repair and condition, (with one or two exceptions,) and quite inferior in appearance and accommodations. . . ." It was too late, the Common Council was informed, to inquire into the expediency of shop butchers since over 500 had already been licensed. The Daily Tribune at this time condemned the public and private meat markets equally. It took a strong stomach, one of its reporters declared, to walk through the public markets, and "yet some eighty thousand households have to be supplied by somebody, every day, from these filthy and revolting sink-holes." ¹³

Despite the apprehensions about the sale of spoiled and diseased meat, in 1852 a member of the New York Academy of Medicine asserted that the meat sold in New York was "generally of a superior quality. . . ." The major exception, he said, was the meat derived from animals fed on distillery wastes.¹⁴

The fall from grace of public markets is indicated by Mayor Jacob A. Westervelt's annual message to the Board of Aldermen on January 3, 1853. He complained of the condition of the markets, and even more of the fact that they produced so little revenue for the city. The City Comptroller in 1854 went a step further and recommended that the public markets be leased to private groups at a fixed annual rent. He was sure that private enterprise could construct as splendid public markets as it did hotels. A resolution to this effect was referred to the finance committee which, after due study, stated firmly that any privately managed enterprise was certain to be more efficient and of greater benefit to the community than one operated by the public. Any restriction upon

the sales of market articles, the committee felt, was generally "of evil tendency, calculated to materially advance the price of the necessaries of life, and therefore bearing peculiarly hard upon the poor and laboring class in this city. . . ." The committee recommended that all existing markets be sold or leased, but that two or three large markets be established on the waterfront to accommodate country people on a first-come, first-served basis. 16

Judging from the descriptions of the markets, any change would have been for the better. A Daily Times editorial in 1854 referred to that "little heap of fish scales, eel heads, butchers' offal, and rotting vegetables known as Catharine Market," called Centre Market "a dirt heap," and Washington Market "the slimiest spot in the city. . . ."¹⁷ The 1850s was a period of administrative inefficiency, and a good part of the market problem arose from negligence on the part of the market clerks or inspectors. In the records of the Board of Commissioners of Health for 1856 is a letter of protest claiming that the flesh of diseased cattle was continually exposed for sale. The writer added that he understood there were meat inspectors, "but if such is the case, they are certainly very remiss in their attention to their duties." ¹⁸

Little was done to improve conditions, and in 1859 the Mayor, after complaining of the expense of running the markets, recommended closing those in the less populous areas. A year later City Inspector Delavan, who described the city markets as "a singular agglomeration of rotten wood, worn-out masonry, and collected filth," took the opposite view: his solution was to rebuild the existing markets and to add three new ones. This viewpoint was expressed in a subsequent report by John Slowey, superintendent of markets, who argued that the shop system had emerged because of the city's failure to provide new markets. Public markets, Slowey maintained, could provide cheaper and better food and would be much easier to regulate. 19

Whatever the theoretical merits of private versus public markets, the wide-scale graft and inefficiency which characterized the entire city administration convinced many citizens of the need for privately operated shops or markets. The *Daily Tribune* carried on a continuous campaign against the city markets, arguing that private shops would be cleaner, cheaper, and would offer better food.²⁰ In 1863 responsibility for the markets was trans-

ferred to the Comptroller's office, which brought some improvement.²¹

Despite the vociferous opposition to the public markets, there was still considerable support. Aside from those groups with a vested interest, the sanitarians favored public markets since they facilitated the enforcement of the food regulations and made available better and cheaper food. Possibly because of this fact, there was a strong movement in the mid-sixties to repair existing markets and build new ones. In 1865 Mayor Gunther urged the establishment of wholesale markets in the upper part of the city. His statement, although a tacit admission of the permanence of small butcher shops, at least supported public markets in principle. Two months later, the State Legislature passed an act authorizing a new market in the Eighteenth Ward, located on a site bounded by 16th and 17th Streets, Avenue C, and the Fast River. The next year, Mayor John T. Hoffman reflected the changing attitude toward markets when he called for "the removal of the miserable structures which now disgrace the city," and demanded that the city embark upon a program of market construction.²² Whatever the public officials may have believed, business and professional men generally had little faith in the honesty or efficiency of municipally operated enterprises, and without their support, little could be done. To survive, the markets had to grow with the city. Their failure to do so ensured that private enterprise would fill the vacuum and gradually relegate public markets to a minor role.

Bread and Flour

Throughout the years from 1825 to 1866 the old bread assizes or regulations were reenacted periodically and were generally strictly enforced. As noted earlier, these specified the exact weight of the loaf, stated that all bread must be made from wholesome flour and meal, and decreed the confiscation of all substandard bread.²³ Surprisingly few complaints were registered about the quality or price of bread during these years. Although large commercial bakers had appeared on the scene, the competition from small bakeries, which supplied most of the bread, meant that good quality bread at reasonable prices was usually available. The fine for

selling substandard bread was \$10. While this sum was adequate in the case of small bakeries, as large firms developed in later years, the fine became purely nominal. Fortunately, there were no significant violations until the 1850s when some criticism arose over the quality of flour. The earlier laws providing for the inspection of flour had been eliminated in 1846. While this action brought no immediate change, within a few years the quality of flour began to decline. One of the newspapers complained in 1856 about the flour millers' barreling "smutty wheat bran" and labeling it as "superfine flour." Several appeals were made for the reappointment of flour inspectors, but the problem was not considered serious enough to merit legislative attention.²⁴

The Milk Supply

One article of food which aroused a great deal of controversy in New York from 1840 to 1866 was milk, most notably swill milk. The dangers affecting the city's milk supply were many: the production of milk under unsanitary conditions, the milking of diseased cows, the universal tendency to water milk, and the constant addition of harmful chemical substances to improve the color and texture of a poor supply. Through this latter process, a milk which was often just a thin, bluish mixture in the beginning was transformed into a rich, creamy substance by liberal additions of magnesia, chalk, and plaster of paris.

The most dramatic public debate in this period, however, revolved around the relative merits of milk produced by swill-fed cows as against that from a grass-fed herd. Swill milk involved all the other complaints except watering—the milk was already watery enough—but a good part of the outcry arose from the presence of enormous distillery herds located in the midst of the city. For citizens today, whose only encounter with milk production is the finished product at the corner supermarket and whose major concern is price rather than purity, it is difficult to recreate the appalling conditions that prevailed in the city just one hundred years ago. Until refrigeration and rapid transportation made possible the economical marketing of milk from outlying areas, both slaughtering and dairy production were limited to the close confines of the metropolis itself. To furnish a cheap milk supply, large dairy herds

were kept in what was then the upper populated regions of the island, generally on the West Side near 16th Street. From here the milk was carted to the wards in the lower sections of the city.

Though facilities existed in the city for good dairy production, vet in a classic example of business cupidity and governmental inaction, the worst possible conditions prevailed. Pastures, where the herds might exercise in fresh air, were almost unknown, and the animals were crowded into cramped, filthy stalls with little light or ventilation. Cleansing of these premises was a rarity, for sanitation cost money. In order to reduce feeding costs, most large city dairies were located next to distillery manufactories; here, the boiling hot waste product of the fermentation process, swill, was fed directly into the stable troughs. The swill had a relatively high nutritive value, but it needed to be supplemented by hav and grain, something few dairymen were willing to do. Though disease among the brutally confined herds was rampant (most animals survived less than a year), their milk and meat was part of the regular supply daily offered to consumers. Neither the city nor the state took any action, since the old mercantilist view of governmental regulation in the public interest was fast crumbling under the onslaught of the new credo of individualism and laissez faire, a philosophy so derelict in its conception of public responsibility that it would have startled and appalled the colonial fathers. The swill milk problem did not trouble the wealthy who could afford good milk from farms in Westchester, Queens, and Connecticut, but for the poor, there was no alternative. Yet even the rich could not escape the odors wafted from the filthy stables, and it was this "public nuisance" which drew attention to the intolerable conditions under which swill milk was produced.

Public criticism against swill milk first arose in the late 1820s and 1830s and led some of the orthodox dairymen to advertise that their cows were grass-fed. One man in Greenwich, Connecticut, informed his New York customers that there were no distillery slops or brewer's grains within thirty miles of his dairy. In the early 1840s a brief public campaign against swill milk was begun under the leadership of Robert M. Hartley, subsequently general agent of the Association for Improving the Condition of the Poor, and the New York *Post*. As a result of this agitation,

resolutions were presented to the Board of Aldermen in both 1841 and 1842, calling for the appointment of a special committee to investigate the swill milk question, but no action was taken.²⁵ The issue aroused little further attention for several years until it was revived in 1847–1848. From this time on the campaigns against swill milk steadily mounted in intensity.

The opening gun came with a long article and editorial in the Daily Tribune on June 26, 1847. The Tribune stated that its news article had been prepared "by a scientific gentleman of the highest character." The author was in all likelihood Dr. Augustus Gardner, who later, as chairman of the New York Academy of Medicine's committee on swill milk, wrote extensively on the subject. The Tribune article described swill milk not only as "innutritious" but as containing "positively noxious properties." The author blamed New York's excessively high infant death rate largely upon the faulty milk supply, and asked rhetorically: "What other city would allow 100,000 quarts of impure, demonstrably diseased milk, to be distributed every week among its inhabitants...?" 2002.

About this same time the New York Academy of Medicine set up a committee to look into the swill milk situation and appointed Dr. Gardner as chairman. On March 1, 1848, the committee's report was presented to the Academy. Much of the report was devoted to the atrocious conditions under which the distillery cows were kept. Some of these stables had as many as 2,000 to 4,000 cows, and the report concentrated upon describing the boiling hot slop fed to the animals, the brutal confinement in unventilated and filthy stalls, and the subsequent diseases developed by the herds -running, ulcerated sores over the body, lack of teeth, sore feet, and consumptive lungs. Under such conditions, the committee declared, "these animals could not give natural and healthy milk." After citing the results of a chemical analysis which showed that swill milk contained relatively little butter fat, the committee quoted and expressed agreement with Professor Charles A. Lee of New York University, who attributed cholera infantum largely to the use of distillery milk. The committee concluded by presenting two resolutions: the first stated that swill milk was positively harmful, and the second urged the public authorities to take action

against the distillery herds. Though the Academy accepted the Gardner committee report, the all-important resolutions were laid on the table.²⁷

The failure of the medical profession to take a decisive stand on the swill milk question at this time literally killed all attempts to secure reform. While it is understandable, perhaps, that the doctors wished to await more conclusive evidence of the exact deleterious qualities of swill milk, yet the net result of their inaction was to strengthen the hands of unscrupulous dealers. It was not until 1851 that the Gardner report was officially published by the Academy, and even then little or no effort was made to make the report's findings widely known to the public. In the next few years, several attempts were made by Drs. Gardner and John H. Griscom to move the Academy into reversing its negative position, but, other than giving approval to various tablet and powder milk substitutes, the Academy delayed action until events in the late 1850s proved that silence on the subject could no longer suffice.

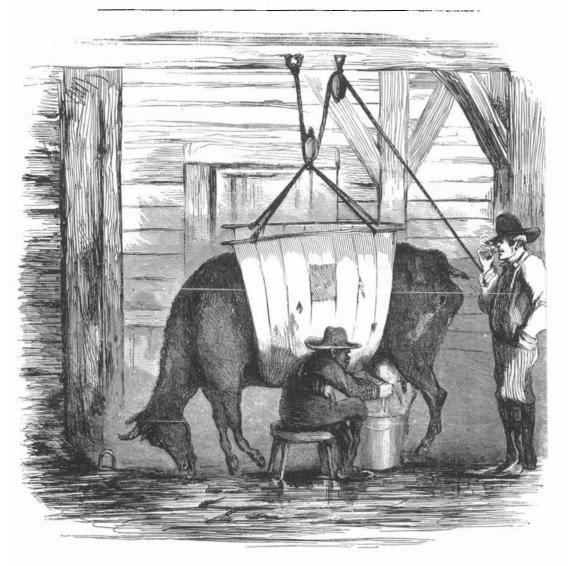
Meanwhile, the newspapers, City Inspectors' reports, and virtually every other medium of communication were filled with nauscating and grim descriptions of the conditions under which the cows were kept. One visitor to the dairies, who was almost overpowered by the stench, was told that the cows were never taken out of their stalls until they stopped giving milk or became sick, in which case they were sold to the burchers. The Daily Tribune, after asserting that thousands of infants died every year from drinking swill milk, expressed surprise that despite all lectures, warnings, and entreaties, New York residents continued to buy swill milk in larger and larger quantites. In March of 1854 the Daily Times blamed swill milk for the deaths of no fewer than 9,847 children under the age of two. In August an editorial comment upon a particularly graphic account of one of the dairies recommended that readers wait until after breakfast before scanning the article.28

In 1856 a group of citizens living in the vicinity of a swill milk dairy located at Tenth Avenue and 16th Street petitioned the health commissioners to have the stable removed and the grounds cleansed and purified. The cows, they wrote, were kept in a shed without light or adequate ventilation. They had no chance to exer-

cise and were fed on swill which was left in the yard "until it becomes sour and breeds millions of insects, thereby emitting a foul smell and sickly effluvia." The foul stench from the filthy stables, the petition read, was "sufficient to produce disease and death among the surrounding inhabitants." The following year a story in one of the newspapers estimated that over two-thirds of all milk sold in New York City was derived from the distillery dairies.²⁹

In the spring of 1858 Frank Leslie in his Illustrated Weekly Newspaper began a full-scale exposé of the whole swill milk industry which eventually forced the Common Council to make a formal investigation. In his first article Leslie pointed out that the high profits from swill milk had made the dealers an effective lobby against reform. He told, too, how his reporters had been assaulted and threatened while endeavoring to gather evidence, but he pledged to keep the subject before the public until reforms were effected. In the successive issues, his journal graphically described, in pictures and in print, the milking of ulcerated and diseased cows under incredibly foul conditions. He particularly irritated the dealers by giving their names and the routes of their wagons. A number of physicians, such as Drs. Griscom and Gardner, who had long opposed the sale of swill milk, wrote letters in support of Leslie's campaign. Dr. Griscom attributed many infant deaths directly to swill milk and a good many others to its indirect effects. On May 22 a long article in Leslie's Illustrated accused the Brooklyn Common Council of truckling to the swill milk dealers. It declared that in December of 1856 the Council had passed a law requiring ample room for dairy cows, but that less than two months later it had nullified the law by an amendment exempting swill milk distilleries.30

In the face of the damning evidence publicized by Leslie, the reluctant New York City Common Council was forced into going through the motions of an investigation. The *Daily Tribune* aptly described the cursory effort: "After giving the swill-milk venders ample time to brush up and 'make it all right' for the official visit, Alderman Tuomey yesterday led his Committee up to Johnson's distillery, looked about a little, found all in tolerably good condidition, took a drink at the corner groggery, got a few samples of milk from the cows, and rode back to City Hall." The rest of the investigation consisted of calling on "a number of persons inter-



A line drawing from Frank Leslie's Illustrated Weekly Newspaper depicting the milking of a swill-fed cow, Courtesy of New York Public Library.

ested in or friendly to the nasty but profitable swill-milk business."31

The protests against this farcical investigation led the Board of Health to appoint a swill milk committee to undertake a more thorough study. A member of the committee wrote subsequently that because a fellow committeeman was so eager "to shield the parties inculpated in the cruelty to the animals and offence to the public, the investigation partook somewhat more of a trial of Leslie than of the perpetrators of the offences charged. . . ." One witness before the committee, in testifying to the beneficial qualities of swill milk, claimed that he had once used it to save the life of an infant. The editor of the Daily Times sarcastically observed that the witness might become the founder of a new school of medicine, if only he could "convince the public that the milk of cows fed on hot swill and covered with running sores is the best beverage in the world for sickly infants. . . ." Leslie kept public attention upon the investigation, and openly accused two aldermen, Michael Tuomey and E. Harrison Reed, the chief spokesmen on the committee for the swill milk dealers, of attempting a whitewash. Probably Leslie's most effective jab was an engraving which showed the aldermen whitewashing swill-fed cows. Subsequently Aldermen Tuomey and Reed brought suits charging Leslie with libel, but the truth of Leslie's accusations was so self-evident that the following October the grand jury dismissed both suits.³²

Early in July the swill milk committee of the Board of Health submitted a majority and a minority report to the Common Council. The majority report, signed by Aldermen Tuomey, Reed, and William Tucker, found the stables clean and the cows healthy, although it conceded that the stables were both too crowded and deficient in ventilation. The committee, it declared, had not found "a single instance where a child or an adult has sickened or died from . . . drinking [swill] milk. . . ." The report concluded by recommending that better ventilation be provided in the stables. It is clear that the majority report simply disregarded much of the testimony in presenting its summation. The minority report, submitted by Alderman Charles H. Haswell, was a damning indictment of the entire swill milk business. Haswell pointed out that it was an admitted practice to milk diseased cows and that urine was occasionally "accidentally or negligently allowed to be received in

the common receptacle for milk." The testimony of witnesses had shown that diseased cows, and even those which had died of disease, were dressed and offered for sale. It was evident, the minority report continued, that workers in the swill milk dairies were both disgustingly dirty and careless. Haswell felt it was worth noting that shortly before the committee visited the dairies, half of the cows were removed from their stalls without any explanation. On the basis of what the committee had seen and the evidence presented by witnesses, Haswell listed four main objections to distillery dairies: crowded stalls, widespread cruptive diseases among the cows, notoriously filthy conditions under which the milking was done, and the practice of slaughtering diseased cows for meat. The solution was simple; climinate the distillery herds completely by an ordinance prohibiting more than two cows on any one premise.⁸³

One of the chief complaints against the swill-fed cows was the omnipresent running sores covering their bodies. A witness before the committee testified that when cows were brought into the city, they were inoculated against tuberculosis. Precisely what this "inoculation" involved is not clear. When this was done, ulcers from the inoculation process often spread over the entire body of the cow. Frequently the tail became so ulcerated that it had to be amputated. In consequence, distillery cows were known as "stump tails" and swill milk was often referred to as "stump tailed milk." Alderman Haswell wrote many years later in reference to the events of 1858: "So general was the knowledge of the outrage . . . to the animals and the imposition of an unsanitary article of food upon the public, that 'swill or stump tailed milk' was for a long period a general . . . expression of insufficiency or deception," 34

On July 14 the Council discussed the majority and minority reports and decided to accept the former. An effort was made by one of the aldermen to require "every stump-tail cart" to carry a sign "Swill-fed Milk," but the resolution was voted down. The following March, 1859, Leslie's Illustrated reported that Mayor Tiemann had asked the New York Academy of Medicine to investigate the whole question of swill milk. The Academy's timorous record gave editor Leslie little hope that anything would come of the investigation. The only success in the fight against swill milk

had resulted from his newspaper's crusade, which had forced the stable owners to clean their premises and get rid of diseased cows.³⁵

Leslie's lack of confidence in the Academy of Medicine had considerable justification, for although individual members had played key roles in awakening the public, the Academy had refused to take an official position on many of the significant public health issues. Gardner's original report had been published only after a long delay, and the Academy had never committed itself to support his resolutions. On June 2, 1858, Dr. Gardner, with strong support from Dr. Griscom, proposed a new resolution condemning swill milk, but the motion was rejected by a vote of 35 to 24. Subsequently, when the Board of Health asked the Academy to express an opinion on the swill milk question, a five-man committee was appointed to look into the matter.³⁶

The report of this committee, generally known as the Percy Report because it was written largely by Dr. S. Rotton Percy, the committee's secretary, was presented to the Academy on March 2, 1850. The findings basically substantiated those of other study committees. The report condemned both swill milk and the meat from swill-fed cows. It quoted Thomas DeVoe, "a well-known and esteemed butcher," as stating that "neither the milk nor the flesh of these animals can furnish healthy human food." The report concluded by recommending a complete prohibition on the sale of swill milk and urging strict licensing regulations for all persons engaged in the distribution of milk. This time the Academy accepted both the report and its recommendations and voted to send them to Mayor Tiemann. The City Fathers sought quietly to table the report, and almost a year clapsed before Leslie's Illustrated, the Academy of Medicine, and other interested parties were able to bring enough pressure to bear upon the Common Council to force its publication.37

With Leslie's Illustrated in the vanguard, the newspapers continued to denounce the swill milk evil, but the municipal officials remained just as adamant in their refusal to take action. The Common Council's position was explained by Frank Leslie when he wrote in one of his editorials: "... they will wage relentless war upon the filthy piggeries, because the owners are poor, and consequently have not the means to buy off the crusade; but the swill milk stables are institutions; their owners are rich men. ..." By

1860 the swill milk crusaders had gained powerful allies in the Association for Improving the Condition of the Poor, the New York Sanitary Association, and the Academy of Medicine. Unable to make headway in the Common Council, these groups turned to the State Legislature. In the spring of 1861 a bill to prevent the sale of swill milk passed the Senate but failed in the House. The following year, on June 20, 1862, a swill milk bill was enacted into law. The measure provided a \$50 fine for anyone selling impure, adulterated or unwholesome milk, laid down a similar fine for keeping cows in crowded and unhealthy conditions or for feeding them swill, and finally, the law required, under penalty of \$100, that all milk wagons show the source of the milk. Unfortunately, the provision forbidding the sale of impure, unwholesome milk was not defined, thus leaving a large loophole for swill milk dealers.³⁸

During the long swill milk fight, the practice of watering or doctoring milk was almost lost from sight. In praising the new law, the A.I.C.P. particularly urged close attention to milk adulteration.³⁹ While the A.LC.P. was especially concerned with the practice of adding starch, sugar, flour, and chalk to swill milk, the old and widespread practice of adding water, most of which was contaminated, may have been a more serious problem. A sarcastic article in the New York Sun in 1834 mentioned that 3,000 gallons of water were sold daily in the city. "They are, however," the editor commented, "whitened with about two thousand five hundred gallons of milk." A few years later a correspondent wrote that he felt adulterated milk was a greater danger than slop or swill milk. If he bought from a dealer whose cows were supposedly fed on grass, the correspondent declared, he was almost sure to get adulterated milk, whereas by buying from a swill milk dealer, it was possible that he would get pure milk. In 1843 a newspaper editor estimated that the milk sold in New York contained at least 25 per cent added water. He mentioned that the American Institute was trying to devise a simple instrument to test the amount of water in milk, and he hoped that each family would soon be able to buy one. In 1852 and 1853 all newspapers carried stories of how blue watery milk was converted into rich creamy-appearing milk through the addition of chalk, magnesia, and plaster of paris. John

Mullaly, an advocate of pure milk, was the author of a pamphlet in 1852 in which he stated that the 91,413 quarts of pure milk entering New York daily were "by some miraculous process" increased to 120,000 quarts.⁴⁰

The terms of a charter granted to the New York Pure Milk Company on April 12, 1858, are a revealing commentary upon the milk situation. The Company agreed that the cows would be fed exclusively upon hay, grain, grass, or other dry vegetable provender and would be given ample free air and exercise in open fields. A significant clause stated that the milk would be placed in locked, metallic cans and drawn off only by faucet—presumably a guarantee against watering or adulteration.⁴¹

As the pressure of the sanitary reform movement increased in the early 1860s, the milk law of 1862 was strengthened in May of 1864 by the addition of a fourth provision which specified that the addition of water, other than in the form of ice, was to be considered an adulteration. The provision also specifically declared that milk from cows fed on swill or distillery wastes was impure and unwholesome. With New York City about to establish an effective health administration, the old problem of swill milk was largely solved. The large number of dairies and milk dealers made the enforcement of the laws against the watering or adulteration of milk exceedingly difficult, but at least by 1866 the health authorities had strong legal backing in their efforts.

Notes to Chapter 19

- Proc. of Bd. of Aldermen, I, 30, 77-78, 400, 403, 408; II, 102, 124, 191;
 Municipal Archives and Records Center riss., box no. 3, July 29, 1831.
- 2. Docs. of Bd. of Asst. Aldermen, no. 66, 1, 659-66.
- 3. Docs. of Bd. of Aldermen, no. 28, II, 117-19; no. 55, II, 237-39.
- 4. Ibid., no. 89, III, 599-603.
- 5. Ibid., no. 31, VI, 363-77.
- 6. Ibid.
- 7. Proc. of Bd. of Aldermen, XX, 321-22.
- 8. Docs. of Bd. of Aldermen, no. 43, VII, 599-606.
- 9. Ibid., no. 46, IX, 409-10.
- 10. Ibid., no. 45, IX, 391 405; Proc. of Bd. of Aldermen, XXIV, 104-105, 274-75; By-Laws and Ordinances... Revised 1845, 114-17.
- 11. Docs. of Bd. of Aldermen, no. 52, XI, 517-22.
- 12. Ibid., no. 15, XVI, 189-90.
- 13. Daily Tribune (Supplement), September 20, 1849.

- 14. N.Y.A.M., Minutes, July 7, 1852, p. 310.
- 15. Does, of Bd. of Aldermen, no. 1, XX, pt. 1, p. 8; no. 41, XXI, pt. 1, pp. 641-49.
- 16. Ibid., no. 50, XXI, pt. 2, pp. 935-40
- 17. Daily Times, September 26, 1854.
- 18. Reports, Resolutions, and Proceedings of the Commissioners of Health ... 1856-1859, 104.
- Docs. of Bd. of Aldermen, no. 1, XXVI, pt. 1, pp. 40-42; City Inspector's Report, 1860, 22-24; 1861, 283-93.
- For an example of the Tribune editorials, see Daily Tribune, July 18, 1860.
- 21. Docs. of Bd. of Aldermen, no. 6, XXXI, pt. 1, p. 59.
- 22. Ibid., no. 1, XXXII, pt. 1, p. 19; no. 1, XXXIII, pt. 1, pp. 31-32; N.Y. State Laws, 88th sess., chap. 120, March 15, 1865, pp. 211-14.
- 23. By-Laws and Ordinances . . . Revised, 1838-39, 281; Revised Ordinances . . . 1856, 434-35; Ordinances . . . 1859, 424.
- 24. Daily Tribune, March 25, 1856.
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- Daily Tribune, June 6, 1849, January 18, 1853; Daily Times, March 9, August 18, 1854.
- 29. Reports, Resolutions, and Proceedings of the Commissioners of Health ..., 1856-1859, 55; Daily Times, September 7, 1857.
- 30. Leslie's Illustrated, May 8, 15, 22, 1858.
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- 32. C. H. Haswell, Reminiscences of An Octogenorian of the City of New York, (1816–1860), (New York, 1896), 511-12; Times, June 12, 1858; Leslie's Mustrated, July 17, August 7, October 9, 1858.
- 33. Majority and Minority Reports of the Select Committee . . . Appointed to Investigate the Character and Conditions of the Sources from which Cows' Milk is Derived. . . . (New York, 1858), 6-10, 24-28.
- 34. Ibid., 277; Haswell, Reminiscences, 512.
- 35. Reports, Resolutions, and Proceedings of the Commissioners of Health . . . , 1856-1859, 228-30; Daily Times, July 24, 1858; Leslie's Illustrated, March 5, 1859.
- 36. N.Y.A.M., Minutes, June 2, 16, 1858, pp. 554-55.
- 37. Ibid., March 2, July 6, 1859, pp. 582, 595; N.Y.A.M., Transactions, II (1857-1863), 97-149; Leslie's Illustrated, July 9, 1859.
- 38. Leslie's Illustrated, September 3, 1859, April 6, 1861, March 22, July 5, 1862; N.Y. State Laws, 85th sess., chap. 467, April 23, 1862, pp. 866-67.
- 39. A.I.C.P., Nineteenth Annual Report, 1862, 54-58.

Food and Market Regulations

^{40.} Sun, March 28, 1834; Evening Post, August 25, 1838; Daily Tribune, May 10, 1843; Daily Times, September 23, 1852, January 22, 1853.

^{41.} N.Y. State Laws, 81st sess., chap. 158, April 12, 1858, pp. 277-79; Does. of Bd. of Aldermen, no. 12, XXV, 9-12.

^{42.} N.Y. State Laws, 87th sess., chap. 544, May 2, 1864, pp. 1195-96.

20

Epidemic and Endemic Diseases

During the eighteenth century New York had been scourged by many epidemic diseases, vellow fever, smallpox, measles, diphtheria, and recurrent outbreaks of respiratory and enteric disorders. The relatively small size of the city, the vast ocean which separated it from Europe, Africa, and Asia, and the limited communication between American towns and villages all contributed, however, to reducing the incidence of major communicable diseases. Contradictory as these two statements may seem, they are not mutually exclusive. When smallpox or measles, for example, was introduced in New York during colonial days, the large number of nonimmunes guaranteed that the disease would quickly sweep through the town. Having burned itself out, the disorder would disappear, sometimes for a period of ten or twenty years. In the larger European cities measles and smallpox were endemic sicknesses, constantly taking a heavy toll among infants and children and striking down newcomers of all ages. In American towns these diseases were unfamiliar, frightening plagues which indiscriminately killed young and old. Thus the endemic disorders of the Old World were major epidemic diseases in the New. Although American colonists dreaded these strange and unaccountable plagues, in the long run they suffered far less from them than did their European contemporaries, who accepted, as a normal course, a high annual mortality among their children.

By the nineteenth century smallpox and measles had become both more common and less dangerous. Vaccination had reduced the threat of smallpox, and measles had become largely a children's disease. Yellow fever struck hard at New York City during the first quarter of the century, and then, except for occasional cases reported at the Quarantine Station, disappeared for good. Diphtheria never returned in the dramatic fashion which had characterized the great "throat-distemper" outbreak of the previous century, although it remained a serious threat to health throughout the nineteenth century. After 1825 the one great epidemic disease to sweep through the city in the tradition of the earlier pestilences was Asiatic cholera, a disorder possessing all of those qualities which aroused fear and consternation. It was a new and unaccountable sickness which coursed rapidly through the population; it could bring death in a matter of hours, and the pinched, blue faces and dark drawn skin of its victims were a fearful sight to all who encountered them.

The dread and apprehension caused by cholera was enhanced by the fact that it was the most widely heralded epidemic disease ever to strike the United States. An endemic disorder in India and the Far East, Asiatic cholera never spread to Europe until a combination of rapid transportation and crowded, unsanitary urban living conditions in the ninetcenth century provided the right environment. As cholera advanced through Russia, Eastern Europe, and pushed westward to the Atlantic, American newspapers, popular magazines, and professional journals recorded its seemingly inexorable progress. Editors, physicians, and private citizens everywhere joined in urging local authorities to take immediate sanitary precautions. By 1830 the intimate relationship between dirt and disease was widely recognized, and it was assumed, correctly in this case, that the elimination of public nuisances and the cleansing of the filthy slum areas would prevent or reduce the incidence of cholera. Not all articulate Americans accepted the views of the sanitationists, but all followed Asiatic cholera's course through Europe with a morbid fascination.

The precautionary measures taken by the New York City authorities in 1832 have been detailed in Chapter 11: proclaiming a quarantine, setting up a new method for street cleaning, appropriating \$25,000 for the Board of Health, and sending two physicians to study the disease in Montreal and Quebec. As a further safety measure, a special committee appointed by the Common Council to arrange for the annual July Fourth celebration recommended on June 25 that the city forego all festivities. The "most vindictive desolations" caused by Asiatic cholera in Paris and London, it was pointed out, had "been immediately consequent upon excesses

arising out of national celebrations. . . ." Despite all precautions, on June 26 an Irish immigrant fell violently ill, suffering from extreme stomach cramps. Although he recovered, two of his children subsequently died after experiencing identical symptoms. The attending physicians concurred on a diagnosis of Asiatic cholera. Other cases soon appeared, leading to a sharp conflict between the Medical Society and the Board of Health, with the former accusing the latter of failing to proclaim the outbreak of Asiatic cholera.¹

Even before July 2, when the Medical Society publicly announced the presence of Asiatic cholera, a mass exodus was well under way. July 4 became a day of fasting and prayer in the quiet and seemingly deserted city. Yet there had been relatively few cases—the Special Medical Council appointed by the Board of Health announced on July 4 that only 7 cases and 4 deaths had occurred and that the general health of the city was good. The following day the Evening Post listed 20 cases of cholera and 11 deaths, higher figures than the official ones, but still not many for a major city.²

The cases soon multiplied, however, and the Board of Health pushed ahead with its program of establishing temporary cholera hospitals. Despite the opposition of local residents, who objected to the presence of pesthouses in their neighborhoods, by the end of the month six hospitals were in operation. The exact number of cases and deaths for July is not clear. The superintendent of the Potter's Field reported a total of 1,648 burials from June 30 to August 3, of which 1,422 were attributed to cholera. Since the heaviest toll occurred among the poor, it is safe to assume that most were buried in the Potter's Field. Even so, the total deaths from cholera during this period must have soared to well over 2,000.

The epidemic reached its peak around July 19 and then slowly subsided. On August 15 the Board of Health began closing its hospitals and medical stations, and two weeks later the members of the Special Medical Council submitted their resignations, explaining that the epidemic was almost over. An unofficial count of cholera deaths up to August 18 placed the number at 2,712 and by the time the epidemic had ended early in September, approximately 3,000 New Yorkers had fallen victim to its ravages.⁴

Minor outbreaks of what was diagnosed as Asiatic cholera occurred during the summers of 1833 and 1834. The casualties were few, however, and the chief effect was to keep the city authorities on their toes and to promote the enforcement of sanitary regulations. Meanwhile, Asiatic cholera had swept through most of the United States, leaving thousands of dead in its wake. On the credit side, it had led to the creation of hundreds of temporary boards of health and had forced many cities and towns into massive cleanup programs. Although rumors continued to circulate about the presence of cholera, the disorder did not return to the United States until late in 1848.

In December of that year cases first developed at the New York Quarantine Station following the arrival of a vessel from Le Havre. Health Officer Alexander B. Whiting instituted especially rigid isolation procedures, and although 61 cases occurred with 32 deaths, the outbreak did not spread beyond the bounds of the Quarantine Station. During this period the New York Academy of Medicine devoted three meetings to a discussion of the nature of Asiatic cholera, but the members could come to little agreement on either its cause or cure. A motion to publish a report by the Academy's committee on public health was twice defeated. When the issue was again brought before the Academy in March of 1849, a resolution was passed stating that it was "premature and inexpedient for this Academy to pronounce, at the present time, any positive opinion in regard to the contagious or non-contagious nature of Cholera."

From January to early May, 1849, sporadic cases of suspected cholera began turning up at the Quarantine Station and in the city at large. As a precautionary measure, the Board of Health appointed a committee to establish one or more temporary cholera hospitals. Though encountering stiff opposition from local residents, the committee reported on May 4 that a building on Anthony Street had finally been secured.

This precautionary measure was well taken. On May 14 several cases of Asiatic cholera were discovered in a basement room at the rear of 20 Orange Street in the Five Points district, an area notorious for vice, crowding, and filth. Dr. William P. Buel, physician for the Anthony Street Hospital and later the Centre Street Hospital, provided an appalling description of the scene encoun-

tered by the visiting physician. He told how the door had fallen from its hinges and had been placed on two empty barrels to make a table, the only item of furniture. One of the two small windows had no glass. In this room, ten or twelve feet square, Dr. Buel wrote later, "five human beings, one man and four women, lay upon the floor, in different stages of cholcra. There was nothing under them but mud and filth," he continued, "and nothing over them, but a few rags of the filthiest condition."

The Board of Health quickly established a fourteen-man Sanatory Committee and immediately intensified the cleanup campaign which had been started a few weeks earlier. Additional health inspectors were appointed, and pressure was brought to bear upon tenement owners and businessmen to remove any nuisance and to keep their places clean. The temporary quarters on Anthony Street quickly filled with patients, and the Sanatory Committee secured a three-story building on the corner of Pearl and Centre Streets, henceforth known as the Centre Street Hospital. In short order this Hospital, too, proved inadequate, and the Committee appropriated four schools. This step, which involved dismissing the students, outraged both the teachers and the school board.8 For the first month the health officials were engaged in organizing hospitals, conducting a sanitary campaign, and reassuring the public. Three physician members of the Sanatory Committee, designated as the Medical Counsel, informed the public on June 5 that the disease was spreading slowly and, because of its mild form, was amenable to treatment. The physicians did not believe it was contagious. Its cause, they said, lay in a "peculiar condition of the atmosphere" which could precipitate the disease when combined with other exciting causes such as intemperance and poor diet. The public was advised, as had been the case during the 1832 epidemic, to keep warm, eat moderately, maintain personal cleanliness, stay calm, and get medical help as soon as the first symptoms developed.9

Reflecting the changing intellectual attitude, the editor of the Daily Tribune criticized a proposal to hold a day of fasting and prayer, arguing that cholera, rather than a punishment from God, "is the natural result of our violations of the Physical Laws of the Universe. . . ." The solution to cholera, he declared, was to discover which laws man had broken and to correct the situation.

President Zachary Taylor, however, proclaimed August 3 a national day of fasting and prayer. Meanwhile, the Board of Health, searching for more worldly causes of the epidemic, issued an order closing many starch manufactories and fat, offal, and bone-boiling establishments. Laudable as were its intentions in closing these establishments, the Board inadvertently worsened the situation. The carcasses and offal ordinarily fed into the boilers were now thrown into the nearest slip, creating an even greater nuisance. Moreover, in the interests of sanitation, a massive drive was made to climinate hogs from the main part of the city. Its success, however, removed the city's chief scavengers precisely at a time when the offal and fat boilers were no longer operating, and increased the amount of garbage just when the City Inspector's Office was making a special effort to remove it.

Although the outbreak spread more slowly than the previous one, it picked up momentum in late June and early July and reached a peak around July 21. Though the number of cases declined after this date, it was not until September 6 that the Board of Health's daily cholera report was discontinued, and the end of the epidemic was not officially proclaimed until October 1. The records of the cholera hospitals show that the case fatality rate was high. Of the 1,901 patients admitted to the five hospitals, no fewer than 1,021 died, a death rate of almost 54 per cent. The true figure may well have been much higher. Dr. William P. Buel claimed that despite the efforts of the city authorities to obtain complete reports from the physicians, little success had been achieved. He estimated the number of cases at between 18,000 and 20,000 and the deaths at 8,000. 12

The severity of this outbreak combined with the constant threat of cholera's reintroduction by immigrant vessels kept the attention of New Yorkers focused upon the disease for the next five years. Cases continued to turn up at the Quarantine Station, and minor outbreaks occurred nearly every summer, but the disorder did not again reach epidemic proportions until 1854. In the spring of this year the newspapers grumbled as usual about the omnipresent filth and warned of the danger from cholera. The Daily Times asserted that the only barrier to the disorder was the quarantine, for "the senses are offended on almost every block with the sight

and odor of decaying carbage [sic] and filth, that would seem sufficient to breed a plague in the best situated city on the globe." A number of cases were reported by the middle of June, and the Board of Health directed physicians to report all patients with "pestilential, contagious, or infectious diseases." As the number of cases multiplied, the Board opened a cholera hospital at 105 Franklin Street. Within a month the hospital had admitted 228 patients and had lost 110 to the disease. As it became evident that a full-scale epidemic had broken out, the Board of Health opened a second cholera hospital on Mott Street. 13

On August 11 the death toll from cholera was given as 1,178. New York residents were consoled with the thought that only 250 of these were native residents. The epidemic was already abating by this date, but, as was true in 1849, the city was not rid of the disorder until October. The two city hospitals treated a total of 935 patients, losing 409 of them. 14 The exact death toll for the whole city is not clear, but the disease proved far less serious than had been the case in 1849. Following this attack, New York was given a twelve-year respite. After threatening in 1865, the disease finally broke out in the summer of 1866. By this time the Metropolitan Board of Health was in operation and energetic measures were taken to combat the outbreak.

The three great onslaughts of Asiatic cholera in 1832, 1849, and 1866 had shown it to be a major epidemic disease. The disorder had taken the lives of thousands of New Yorkers and had sickened many thousands more. Because of the long intervals between the attacks, cholera never posed quite the threat nor raised as many fears as had yellow fever earlier in the century. Nor did the disease stimulate the civic authorities to the strenuous efforts which had characterized the fight against yellow fever. Yet cholera had presented the sanitationists with a major weapon, for it had led on occasions to drastic sanitary programs, and it had helped to arouse a strong public health consciousness.

In considering the history of diseases, one cannot help being struck by the disparity between the diseases which people worried about and those which caused the greater amount of sickness and death. As already noted, epidemic diseases understandably aroused concern. Asiatic cholera, smallpox, yellow fever, and typhus were discussed at great length in the newspapers, medical journals, and

meetings of the municipal authorities. Of this group, yellow fever was of negligible consequence to New York City after 1805, other than to promote quarantine laws and to make the residents health conscious. Asiatic cholera received a great deal of attention, yet it is doubtful that it killed as many as the more common smallpox. Typhus was essentially an immigrant disorder which respectable citizens tended to shrug off. It was clearly the product of dirt and crowding; hence the immigrant poor had only themselves to blame. None of these disorders, however, compared in any way with the heavy toll exacted by endemic sicknesses. Consumption (tuberculosis) alone killed and debilitated far more New Yorkers than cholera, smallpox, yellow fever, and typhus combined. But consumption was a familiar-and faintly romantic illness. One has only to think of Mimi in La Bohème to understand the illusion of romantic tragedy associated with this disease. Like other respiratory ailments and the omnipresent enteritic disorders, consumption was simply a part of life.

New Yorkers, with good reason, also worried a great deal about smallpox. It was a horrifying disorder, but the concern arose at least as much from the fact that smallpox deaths were completely unnecessary. Of all the many deadly pestilences to strike mankind, this was the only one that man had learned to conquer. Smallpox existed because of ignorance, stupidity, and apathy, and as such was an affront to intelligent and informed citizens. The medical profession fought constantly for general vaccination, and the doctors received considerable support from the authorities. The stumbling block, however, lay in the public attitude. As memories of the terrible smallpox epidemics receded, the public became apathetic toward vaccination. New York, like nearly all port cities, had a special problem with the immigrants, many of whom were suspicious and resentful of attempts to vaccinate them. The sharp increase in immigration in the mid-century brought with it a comparable rise in smallpox deaths. Dr. Joseph C. Hutchinson, physician to the Brooklyn City Dispensary, estimated that smallpox had caused 18.7 out of every 1,000 deaths in New York in the early years of the century and that the figure had increased to 25.4 by the midcentury. Prior to 1835 the total annual smallpox deaths rarely exceeded 200, and for most of the years the figure was negligible. Subsequently the totals rose to 586 in 1851, 516 in 1852, and 681 in 1853.¹⁵ The nineteenth century was one of incredible scientific and social progress, or so it seemed to those living in it, and the rising incidence of smallpox seemed a denial of man's quest for a better social order.

The practice, which had started early in the century of providing free vaccination through the dispensary physicians whenever smallpox threatened, was continued and broadened. In times of crisis, the Common Council often allocated money to the dispensary physicians permitting them to visit each house in their district, offering gratuitous vaccination to the inhabitants. In 1825, for example, over 5,000 individuals were vaccinated as a result of a house-to-house campaign. Two years later the Council appropriated \$1,000 to give each of the ten dispensary physicians \$100 so they could again conduct a house-by-house visitation for vaccination purposes. A malpractice suit growing out of the death of a child vaccinated in 1825 by Dr. Gerard Bancker, a dispensary physician, was decided in the doctor's favor. When the plaintiff proved unable to pay court costs, the Common Council voted to take care of them and to indemnify Dr. Bancker for all losses sustained.16

The newspapers consistently supported the medical profession on the smallpox issue. The mere threat of smallpox would precipitate a flood of editorials advocating general vaccination. In the summer of 1830 Mayor Walter Bowne issued a public proclamation noting that smallpox cases were present on immigrant vessels and that the disease was widespread in Pennsylvania and upstate New York. He requested all citizens to undergo vaccination, reminding them that it would be performed free at the two city dispensaries. The medical journals, too, were unanimous in their appeals for a general immunization program. Dr. J. S. Bowren asked why it was that the State Legislature could establish a quarantine and yet could not require compulsory vaccination.17 Despite the soundness of Bowren's suggestion, it was counter to prevailing sentiment, and New York City continued with its voluntary program. Considering the level of public education, this approach worked fairly well. Periodically a fairly severe epidemic developed, but a prompt vaccination program usually brought it under control. In 1835 some 351 deaths from smallpox occurred, but this was an unusually high figure. The City Inspector's report for 1839 was far more typical. It showed 68 smallpox deaths, 38 occurring among children below the age of five. 18

An outbreak of smallpox in 1845 raised the total smallpox deaths for the year to 425. The Board of Health promptly began free vaccinations in each ward. More significantly, a state legislative committee studying the quarantine laws began an investigation of vaccination. It discovered that among almost 10,000 children received in those orphanages which insisted on vaccination, only one had died of smallpox. The following spring, when a new quarantine law was enacted, one provision authorized the Health Officer, whenever he deemed it necessary, to vaccinate all persons on incoming vessels. For the year 1846, City Inspector Cornelius B. Archer reported a noticeable decline in the deaths from smallpox. He attributed this decline to the work of the dispensary physicians, but the new quarantine provision must have helped. As many of his predecessors had done, he appealed for the appointment of permanent vaccine officials.¹⁹

The flood of immigration which was beginning at this time soon swamped all facilities, and the incidence of smallpox steadily rose for the next few years. Demands for compulsory vaccination increased, but they went unheeded. The rising number of smallpox cases accentuated the inadequate hospital facilities. The only hospital for smallpox was under the jurisdiction of the Almshouse, and it was woefully inadequate. The Superintendent of the Almshouse reported the need for more beds as early as December of 1826. In 1829 the Mayor also recommended providing better accommodations for smallpox patients. Nothing was done, however, until 1848, when \$40,000 was appropriated to build a Smallpox Hospital on Blackwell's Island. Since this institution was designed exclusively for the poor-and bore the stigma of an almshouse, the city still had no hospital to which well-to-do strangers could be sent. To make matters worse, the Hospital on Blackwell's Island had accommodations for only twenty patients, although frequently as many as sixty were admitted.20 The deplorable conditions in the Smallpox Hospital and the stigma attached to it as a charitable institution led many smallpox victims to take public transportation to Staten Island and enter the quarantine hospital.²¹

A significant step toward a compulsory vaccination program was taken in 1860. As a result of long agitation, on April 16 the State Legislature passed a law authorizing local school boards to require vaccination of all students entering their schools. A physician was to be appointed in each school district, and children whose parents could not afford to pay were to be vaccinated free. Furthermore, the school boards were to include in their annual reports a statement showing the exact number of vaccinated and unvaccinated children.²² Since many school boards, particularly in rural areas, did not believe in vaccination, and others were not willing to pay for it, the law was far from a compulsory school vaccination measure. It did, however, establish the compulsory principle, and it made possible more rapid progress.

In 1862 the New York City Board of Health Commissioners petitioned the State Legislature for a compulsory law. The petition cited the fact that the city had averaged more than 400 small-pox deaths annually for the previous ten years, all of which were unnecessary. It suggested that a vaccination certificate be required for every school child and every employee. ²³ Had the Legislature heeded this request, hundreds of lives could have been saved, but compulsory vaccination was counter to the spirit of American democracy. Hence the vaccination advocates concentrated on making the school vaccination law effective.

Although yellow fever posed no serious problems for New York after its depredations in the first quarter of the nineteenth century, it aroused justifiable apprehensions in the 1850s. The pestilence had reached its peak on the North Atlantic Coast around 1800, but it was just beginning its onslaught on the South Atlantic and Gulf Coast regions. In the latter areas yellow fever epidemics intensified until the 1850s, culminating in a series of major outbreaks. In New Orleans, for example, the fever killed approximately 9,000 in 1853, 2,500 in 1854 and 1855, and another 5,000 in 1858.²⁴ With the seeds of infection widespread in the southern coastal regions and major epidemics in the West Indies, New Yorkers had good reason to worry. The medical profession was still debating the relative merits of quarantine versus sanitation, but the New York authorities wisely resolved to use both precautionary methods.

Although neither the quarantine system nor the sanitary pro-

grams were well enforced, environmental conditions favored New York, Moreover, the Ouarantine Station on Staten Island was far enough removed from the city proper to exclude the infected mosquitoes. Yellow fever cases were encountered by the quarantine officials nearly every summer, but these were promptly isolated, thus preventing the disease from spreading. The great vellow fever epidemic in New Orleans during the summer of 1853 was faithfully reported in the New York newspapers, and led to many speculations as to the nature of the disease and the means by which it was communicated.25 In 1855 the disease came closer, when it struck at Portsmouth, Norfolk, and Gosport, Virginia. In April of the following year a vellow fever case was landed at the Quarantine Station from a Havana vessel. In the ensuing months some 47 infected vessels arrived in New York. Lax enforcement of the quarantine restrictions permitted the disease to spread to the towns on Staten Island, from there to Fort Hamilton, and along the Brooklyn shore from Gowanus to Gravesend Bay. By September vellow fever appeared on Coney Island and in Bergen, New Jersey. All told, about 538 cases were reported, approximately one-third of which resulted in death.26

The outcry resulting from the failure of the quarantine officials to keep the disease at bay led to a strengthening of the quarantine regulations. In consequence, when many vessels with yellow fever aboard arrived in New York in 1858, the quarantine officials effectively kept the disease in check. Over a hundred cases were treated in the quarantine hospital, but the disorder did not spread beyond the quarantine grounds. In summary, although New York newspapers and health officials showed a great deal of concern over the danger from yellow fever during these years, Manhattan remained free of the disorder. Henceforth, except for occasional minor scares, yellow fever never again troubled New York.

Typhus, a disease of dirt and crowding, bore many names during the early nineteenth century—ship fever, jail fever, hospital fever, military fever, and so on. It was frequently confused with typhoid, and was often lumped under the generic term "fevers." Largely because it was associated with institutions or crowded slums, typhus did not arouse general concern. The so-called decent, respectable people, who rarely encountered it, were content to classify typhus as one of the many providential judgments called

down upon the dirty, intemperate, and ignorant. Although it gained an occasional foothold in the slum areas, prior to the 1840s typhus was largely an institutional disease. Periodically it would sweep through one of the almshouses or jails, but, other than the medical profession, no one was much concerned. Even the physicians were not overly worried, since they had learned empirically how to deal with the situation. For example, outbreaks in the penitentiary and Bellevue Hospital in 1825 were stopped by removing all inmates and cleaning and whitewashing the buildings.²⁷ Nonetheless, almost every year from 1825 to 1845 typhus caused one to two hundred deaths.

The large-scale influx of immigrants in the 1840s and 1850s greatly aggravated the situation. In July, August, and September of 1847, the New York Hospital admitted 467 typhus cases. The rise of typhus as a significant cause of death led the New York Academy of Medicine to appoint a special committee to study the disease. The report, which recommended cleanliness and supportive treatment, was subsequently submitted to the Common Council. The following year deaths from typhus soared to 720, and by 1851 climbed to almost 1,000. One reason for the high case fatality rate and the intensification of the disease lav in the inadequate hospital facilities for the poor, and in the custom of simply jamming typhus and other fever patients into already crowded hospitals. Under these conditions typhus readily swept through entire wards. In reporting the death of a Bellevue physician from the disease, the New York Medical Gazette and Journal of Health spoke of the necessity for a fever hospital. The *Journal* blamed the doctor's death upon the widespread prevalence of typhus in the "Alms House Hospitals," which it felt was due to the practice of crowding the wards with fever patients, "and thus victimizing the inmates."28

In 1852 typhus reached epidemic proportions in some of the crowded sections of the city. The *Daily Times* reported in February that five policemen in the Fifth Ward were down with the fever and that two others had died from it. The editor of a medical journal placed the blame for the outbreak upon the Commissioners of Emigration for permitting immigrants to be housed under crowded, unsanitary conditions, and upon the Health Officer for allowing so many sick immigrants to pour into the city.

The disease, he thought, was neither imported nor contagious, but arose from overcrowding and poor ventilation. The immediate need, he said, was for the construction of fever hospitals outside the city and for better accommodations for passengers from immigrant vessels.²⁹

The rise of tenements during these years changed typhus into an endemic slum disorder. Because it was restricted to the lowest economic group, it still aroused little public concern. Dr. Stephen Smith, who was well acquainted with the disease through his work at Bellevue in the 1850s, noted on one occasion that many of his typhus and typhoid patients were coming from the same address. He visited it, and found a dilapidated and filthy building crowded with immigrants and vagrants. When the owner refused to clean the premises, Smith, with the support of William Cullen Bryant, editor of the Evening Post, forced him to do so under threat of publicity. In discussing a small-scale epidemic of typhus in Bellevue Hospital during the spring and summer of 1862, Dr. A. L. Loomis stated that most of the cases came from Mott, Mulberry, and Baxter Streets. This information, along with suggestions for preventing the disease, was submitted to the city authorities, but, added Dr. Loomis, "no endeavors (so far as I can learn) were made by the Board of Health to arrest" its progress.³⁰ The real solution to typhus could only come with a higher standard of living and its corollaries, cleanliness and better housing.

Two disorders which were never absent from the bills of mortality, and which were always a significant cause of death in the younger age groups, were measles and scarlet fever. These disorders killed one to two hundred young people every year and, in acute epidemic years, took a much heavier toll. In 1836 a total of 443 measles deaths were recorded, and another 320 in 1851. In this latter year the death toll from scarlet fever climbed to 627. Here again, these were familiar childhood diseases, and as such aroused no undue alarm. Diphtheria, another childhood disorder was not clinically identified until 1857, although it is reasonable to assume that it had existed in a milder form prior to this period. The last great pandemic of diphtheria had occurred over one hundred years earlier, and its reappearance in 1857 led to a considerable discussion among the New York physicians as to whether they were dealing with a new disease or an unusual form of an

existing one. The first significant outbreak in New York came during the winter and spring of 1859–1860. The Academy of Medicine discussed the disease at considerable length in January and February of 1860, but the members could not agree upon its etiology or treatment—a few were not even convinced that it was epidemic. These questions, however, could not be settled until the advent of bacteriology made accurate diagnosis possible. Until then, diphtheria added its ravages to those of measles, scarlet fever, typhus, typhoid, and other fatal epidemic disorders.

Typhoid, which was usually lumped with the so-called eruptive fevers, does not appear to have been a serious problem in New York City. The common use of water from shallow wells in the early nineteenth century would certainly have provided an ideal environment for the disease, but there are few references to "long," "continued," or "slow" fevers,—the common names for typhoid. The introduction of Croton water undoubtedly helped to minimize its effect. The immigrant invasion in the mid-century brought an increase in the number of cases, but typhoid was not considered a major disease. While it is possible that some infant deaths attributed to infantile cholera or summer dysentery were in reality typhoid, the disease still ranks well down the list of epidemic disorders troubling New York City in the pre-Civil War years.

Venereal disease continued to pose a threat to public health throughout the nineteenth century, but, since it was seldom discussed openly, its exact role is difficult to ascertain. Indicative of the public attitude toward it, the only place where treatment was available was in the Penitentiary Hospital, whose patients were exclusively prostitutes and other prisoners. The best indication of its presence is to be found in the numerous advertisements offering purported cures. A standard technique of all quacks was to warn the patient against the danger from mercurial poisoning, since the orthodox treatment was based upon mercury. A Dr. Glover of the New York Lock Dispensary, an institution devoted "exclusively to the treatment of a certain class of diseases," asserted that thousands were "annually mercurialized out of life." The Academy of Medicine was asked to study syphilis in 1860, but the members were reluctant even to discuss it. Other than the use of mercurv the medical profession had no means to combat it. All that a committee of the National Quarantine Convention which met in 1859 could suggest was vaginal irrigation with pure water. The "gumclastic syringes" had now made it possible, the committee reported, to "pour a continuous stream of water into the very focus of contagion."³³

Puerperal fever, which often became epidemic in hospitals and almshouses, was a major worry to parturient women and their physicians. Dr. Alexander Vaché, resident physician of the New York Almshouse, described how in 1840 the disorder attacked 24 out of 59 parturient women, killing 19 of them. Three times the expectant mothers were moved from their wards and the places thoroughly cleansed. Strict instructions were given to the patients to wash themselves thoroughly, and they were provided with new clothes. Despite all precautions, Dr. Vaché wrote, the disease reappeared and was still present in the Almshouse.³⁴

What Dr. Vaché and most of his contemporaries overlooked was the role of the physician in carrying the infection. Shortly after this occurrence, Dr. Oliver Wendell Holmes wrote his essay on puerperal fever, in which he showed that the observance of strict hygienic precautions by the physician would prevent the transmission of infection from one patient to another. While some doctors ridiculed Holmes' idea, many American physicians were favorably impressed. In 1857 Dr. Clarke read a paper before the Academy of Medicine in which he described how several puerperal fever cases had developed in Bellevue Hospital during April. As a result, the women were removed, the place cleaned, new furniture installed, and a different set of doctors and nurses placed in charge. The new obstetrical physician, Dr. Clarke said, spent ten days carefully avoiding all sorts of contamination before assuming charge. The following month he delivered 23 women, not one of whom contracted the fever. Dr. Fordyce Barker, in commenting upon Clarke's paper, agreed with him that the physician was often the medium of infection. As to the communicability of puerperal fever, Barker pointed out that Dr. Holmes had demonstrated this many years earlier with "an array of facts which must ... be convincing to every unprejudiced mind," and that the work of Ignaz Semmelweis in Vienna fully bore out Dr. Holmes' observations.35

Another institutional disease of some consequence was ophthalmia. While it was not fatal, its victims were often left partially or totally blind. It was endemic in many poorhouses and public institutions, particularly where large numbers of children were crowded together. Dr. Nicholas Morrell, a consulting physician with wide experience, blamed the prevalence of ophthalmia among institutionalized children on the practice of jamming them together in poorly ventilated buildings. The rank smell "known and distinguished as the Alms House odour," he wrote, was characteristic of all institutions. In almshouses and hospitals, he said, it caused diarrhea among adults, but in orphanages it resulted in diarrhea and ophthalmia.³⁶

The events in Bellevue from 1820 and 1832 illustrate both the situation which led to epidemic ophthalmia, and the contemporary measures for prevention. In 1829 some 90 children at Bellevue were found to have eve infections, and it was decided to move them to a separate building. When the disease subsided, the children were returned to Bellevue, only to have the outbreak flare up again. Once more the infected children were moved into a larger and cleaner building, and the epidemic gradually subsided. An influx of paupers in 1831 forced the officials to throw a large number of children together, and ophthalmia again reached epidemic proportions. Dr. Isaac Wood, the resident physician, reported bitterly that so long as overcrowded conditions were permitted to exist, the prospect of eliminating ophthalmia was "perfectly forlorn."37 His bitterness was understandable, since in the course of the outbreaks, several children had become totally blind and a number of others had lost the sight of one eye.

As a result of Dr. Wood's protest, some farmland was purchased on Long Island, where it was thought that the children would have more room and plenty of fresh air. By happy chance, in 1833 Dr. Morrell was designated assistant physician to the Long Island farms. A standard practice at this time was for institutionalized children to use common utensils, towels, and washing water. On assuming charge, Dr. Morrell immediately insisted that all children be given individual blankets and towels, and that each child wash with clean water. Combined with plenty of fresh air and clean surroundings, this program gradually eliminated eye infections. At the time of writing, 1840, Dr. Morrell stated that he had seen only twenty minor cases of ophthalmia among 700

children.³⁸ Unfortunately, Dr. Morrell was an exception, and eye infections of one sort or another remained to plague institutionalized children for many years.

Because tuberculosis was not an acute epidemic disease, it received little attention from the authorities, and yet it was without doubt the most significant single cause of death among the general population. Unlike the more dramatic smallpox and cholera, consumption was an insidious sickness which quietly wasted away its victims. Because it was a respectable disorder, that is, affected the middle and upper classes, the term "consumption" undoubtedly covered more than tuberculosis. On the other hand, many deaths ascribed to pneumonia, peripneumonia, and chest inflammation may well have been the result, directly or indirectly, of consumption. Whatever the case, the deaths from consumption rose steadily year by year. In the late 1820s the number of consumptive deaths was edging up to 1,000; by 1860 the figure was approximately 3,000.³⁹

City Inspector William A. Walters was one of the first to draw attention to the seriousness of the disease. In his report for 1840 he pointed out that consumption was responsible for one-sixth to one-seventh of the total city mortality. The death rate from the disorder was 1 to 9.5 for native whites and 1 to 3.5 for Negroes and foreign-born residents. Three years later Walters estimated that one out of every five and one-half deaths was attributable to consumption. Eliminating all deaths among children below the age of ten (including those caused by tuberculosis), Walters showed that in 1843 the disease was responsible for 1,330 out of a total of 3,793 adult deaths. Thus over one-third of all adult deaths were due to consumption.⁴⁰

In commenting upon the annual mortality statistics for 1848, which showed that consumption deaths were twice as numerous as those from any other cause, Horace Greeley, editor of the *Daily Tribune*, wondered whether the disease was not the result of imprudence. He commented upon the number of people who got their feet wet or who wore thin garments in spring and winter, and wondered why the poorer classes bought "the disgusting loads of so-called Meats which are allowed to be hawked about the streets. . . ." Greeley, an intelligent, sensitive observer, was quite

aware of the relationship between poverty and disease, and his remarks were addressed primarily to wealthy women who sacrificed health to fashion. Most well-to-do Americans, however, never realized that the poor may have had no choice, and that the chief imprudence of the poor was in being poor. The slum environment was an ideal one for tuberculosis, which flourished among the illnourished, poorly clothed inhabitants of the unventilated and reeking tenements. Unfortunately, other than recognizing it as one of the many disorders associated with crowding and dirt, little was known about its prevention or cure. Peter Cooper, Dr. Griscom, Dr. Alonzo Clark, and other prominent New Yorkers sought to establish an institution for the care of the tuberculous poor in 1855-1856, but their efforts proved fruitless. 42 In the mid-ninetcenth century only a few people recognized the disease as a major problem; to most citizens it was just another of the inexorable and mysterious workings of Providence.

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^{38.} N.-Y. Inl. of Med. & Surg., IV (1841), 34-35.

^{39.} See the annual City Inspector's Reports.

^{40.} City Inspector's Reports, 1840, 640, 1843, 1146-47.

^{41.} Daily Tribune, April 25, 1849.

^{42.} Walsh, History of Medicine in New York, I, 308 09.

21

Medicine and the Medical Profession

The years from 1825 to 1866 were interesting ones for American medicine. Old theories were being discarded, but as yet the profession had evolved no satisfactory rationale to replace them. The biological and physical sciences were still not at a point where they could contribute to medicine, and many physicians felt they were caught between the Charybdis of pure theories and the Scylla of pure empiricism. As the profession groped for an answer to the intangibles of disease, bitter professional debates turned into equally bitter clashes of personality. The self-doubts of the profession were all too well known to the public, which tended to view the doctors with either amused tolerance or complete cynicism.

By the 1820s the new pragmatic spirit of French medicine was gradually making its way into the United States, where it undermined faith in Benjamin Rush's concept of the unity of fevers and other simplistic explanations of disease and health. Dr. John D. Godman in Philadelphia was one of the first to draw attention to French clinical studies and to promote pathological studies in America. An article in the New-York Medical and Physical Journal in 1828 clearly summarized both the confused state of American medicine and the healthy skepticism which was emerging. The author, Dr. J. Augustine Smith, declared that nothing was easier to construct than a medical theory. All that was necessary was to apply one fact to all times, places, and diseases. Speaking of Dr. Rush's concept of the unity of diseases, Smith quoted one of Rush's friends as having said that "one slight difficulty still remained, one little step was yet to be taken, and if Dr. Rush would only add the unity of remedy, the grand consummation would be complete."1

Young men, Dr. Smith asserted, were too often enticed into theories, since speculation was much easier than the work of collecting dry details and methodically arranging them. As a result, there had been no improvement or change in medical theories for centuries, and little had been "gained from the terra incognita of systematic medicine." The frustrations engendered by this lack of progress had made the profession querulous. "Let half a dozen medical men be required to give their professional opinions to the public," he said, "and they certainly disagree about their facts, and almost as certainly fall to calling each other hard names." In avoiding theories, he warned his audience, do not fall into the error of becoming empirics. "It is our business to observe well, to observe long, and to observe all; to experiment when allowable with care and accuracy, and from the facts thus ascertained," he concluded, "deduce the principles which they warrant."²

To conservatives among physicians, Dr. Smith's remarks appeared as needless criticism, merely providing ammunition with which outside critics could belabor the profession. Even those members willing to accept his principles found them easier to believe in than to practice, and two more generations were to pass before medicine could achieve a scientific basis. There were, however, many signs of change. In discussing microscopes, the *New-York Journal of Medicine and the Collateral Sciences* in 1847 explained that they had "become so essential to the physician, that no apology is needed for calling the attention of our readers to the subject." The instrument may have been essential, but few physicians were acquainted with it in 1848, and the editorial note is itself a revealing commentary upon the profession's attitude toward research involving the use of the microscope.

The introduction of one diagnostic instrument, the uterine speculum, divided the medical profession by raising grave moral issues. Several British and American physicians expressed the sentiments of Dr. Marshall Hall when he declared that "a woman on whom the speculum has been used is never the same, *morally*, [as] she was before," In 1851 Dr. C. R. Gilman of New York defended its use, asserting that the opponents of the speculum were the same men who denounce the use of chloroform and fall "into fits . . . at the idea of demonstrative midwifery. . . ." They are the same ones who "talk most pathetically of those better days of the

Republic when the blush of modesty suffused the cheek of a venerable gentleman of sixty, whose duty—stern duty as a teacher of medical science, compelled him to expose to the view of five hundred students, nay more, to demonstrate the female gential apparatus." The chief objections to the speculum were raised by older members of the profession who had learned to perform even difficult deliveries purely by the sense of touch. Having learned to examine and to deliver the patient while she was covered by a sheet or blanket, they may have subconsciously resented the fact that younger men were now able to do the task easier and better.

Oliver Wendell Holmes' classic work on puerperal fever has already been mentioned. While its immediate result was only a few outraged cries, within ten to fifteen years it had a profound impact upon American obstetrical practice. In 1854 Dr. Charles D. Meigs of Philadelphia, the author of a standard American text on obstetrics, wrote a book entitled Childbed Fevers in which he denied absolutely that puerperal fever was contagious and recommended heroic bloodletting as the primary treatment. A review of Meigs' work in a New York medical journal by "E. H.," probably Dr. Elisha Harris, was highly critical of Meigs' views and contrasted them with those of Dr. Holmes. As to whether or not puerperal fever was contagious, the reviewer stated, the "poetic Harvard professor has furnished an absolute demonstration, by facts, of the affirmative," while Meigs "has defended the negative with the poetic arguments of fanciful hypothesis,..."

The new attitude roward innovations in medicine was reflected in the cautious approach of the medical writers toward anesthesia. A New York medical journalist doubted "that the prevention of pain in surgery is so vital a desideratum, as many seem to suppose." Pain, he felt, was "an essential attendant on surgical operations," which, by virtue of its effects upon the system, served "as the natural incentive to reparative action." While not opposed to anesthesia in all cases, the editorialist deplored the headlong rush toward its use.⁶

Caution did not always assure a verdict for the new order. In 1850 a professor of obstetrics at the Buffalo Medical College used a parturient patient for demonstration purposes, leading to shocked editorials in some of the newspapers and medical journals. The New-York Medical Gazette and Journal of Health published an

account of the incident on September 14, 1850, without making any comment. Two weeks later, the editor, realizing that moral issues must be faced resolutely, came out firmly on the side of virtue and chastity. He conceded that clinical work was essential in obstetrics, recognized the value of drawings and models, and was willing to permit senior medical students to enter parturient chambers; but indelicate exposure, he wrote, "is never necessary." "Catheterism, vaginal exploration, manipulations, . . . delivery by forceps, and embryotomy itself, can all be performed by a competent man as well without the eye as with it." In ordinary labor, he declared, vision is useless and improper, and for skilled men, it is not even necessary in extraordinary cases.

A notable advance in medical practice by the mid-nineteenth century was the reaction against excessive medication and strenuous forms of therapy. Infants were still relegated largely to the care of midwives, whose training was based primarily upon a combination of folk tales and practical experience, with the former predominating. Medical journals were beginning to decry the treatment of infants, although their comments are more revealing of existing conditions than they were in bringing about any improvement. One writer complained that from the hour of birth "catmint tea, parsley tea, salt and water, molasses, goosegrease, soot-tea, urine, onion-syrup, and other 'simples,' including gin, [were] often mischievously given to mother and child. . . . " Having survived this ordeal, in the ensuing months, the infant, "from fancied ailments, is often dosed with sweet oil, castor oil, paregoric, Godfrey's cordial, Dalby's carminative, soothing syrup, sleeping drops, or some other vile compound of opium with molasses and water, in addition to all the rest, before a single year of life has elapsed, if the child survive so long."8

Along with demands for a more scientific approach to medicine and many eminently practical appeals for moderation, old ideas still persisted. Throughout the eighteenth and nineteenth centuries—and even before—physicians had sought for the explanation of epidemic disease in meteorological phenomena. The New York Medical Society, for example, published annual reports of meteorological observations for a number of years, and the City Inspector's annual reports always included meteorological data. In 1855 Dr. J. P. Loines wrote an article entitled "Atmospheric and

Mortuary Observations in New York, comprising the first half of the year, 1855." The article included a long chart correlating such factors as the average weekly temperature, dew point, wind direction, and humidity with the number and causes of deaths. He concluded that good spring and fall weather was most healthy, that winter temperatures were "a direct cause of disease," and that to prevent or remove sickness it was necessary to maintain the humidity and warmth of "a fine outdoor tropical climate." Another of the old ways that persisted was the tendency to present logical assumptions as facts. A writer in the New-York Medical Gazette and Journal of Health stated flatly in an article on health: "If an individual be laboriously devoted to study, and by the excessive employment of his brain, has robbed this organ of its vitality, his disease, whatever it is, will mainly affect the head." 10

On the credit side, the New York medical profession was in the vanguard in the fight for sanitary and health legislation. In 1848 Dr. Samuel H. Dickson of the New York University Medical Department stated in an introductory lecture that municipal or public hygiene was "the most truly important of all the departments of political economy." He denied the popular thesis that disease was the "unfailing evidence of wrong doing," asserting that it was rather the product of the environment. Answering those who smugly attributed the degraded condition of the poor to immorality and intemperance, he inverted the statement, saving that "the physical destitution of the poor is the chief cause of intemperance, vice and disease among them." When Lemuel Shattuck's classic report to the Massachusetts Legislature was published, a reviewer in a New York medical journal wrote that he considered it the most significant public health study in many years. The wisdom of Shattuck's recommendations, the reviewer concluded, guaranteed ultimate achievement.11

In 1851 a medical editor pointed out that the growth of New York's population was increasing the danger from epidemic diseases. He commended the city's water system and the expanding sewerage program, but declared that these were only the beginning. A regular and systematic inspection and sanitary survey of every habitation in the city was "imperatively demanded," and the work should be performed "by an organized Medical Police . . . under the guidance and direction of a commission of Medical

men. . . ." A few months later the same editor reported that although the health of the city was good, mortality among children was unusually high. An efficient medical police, he wrote, and "medical supervision of our markets, and the supplies of milk to the citizens, would greatly diminish the amount of infantile mortality among the families of the poor." 12

While the medical journals leave little doubt that the heroic or drastic treatment moderated as the nineteenth century advanced, the average practitioner was still bleeding, blistering, vomiting, purging, and sweating, much as his predecessors had done from time immemorial. The rise and fall of medical theories had little impact upon practice, other than to modify or emphasize one or more of the five traditional forms of therapy. When John Pintard's grandchild was seriously ill with a fever in 1830, the physician promptly used "the most active remedies" to evacuate his stomach and bowels. "The violent operation of the antimony," Pintard wrote, "sent the blood so to his head, that he was bled & leeches applied. After this process, an anodyne was prescribed." Demonstrating the remarkable resilience of the human constitution, the child survived.¹³

Bleeding was one of the most accepted forms of therapy and was often used as a precautionary measure. One of Pintard's aunts, bled by a New York physician, was surprised to see the blood flow without feeling the puncture, "being accustomed to the phlegms of country physicians, instead of the delicate lancets in modern use. . . ." In 1831 Pintard recorded that his doctor "bled me *copiously* yest^y wh was much required." One of his old friends had been advised for his health's sake to be bled semi-annually, and had followed the advice successfully for thirty-one years. 14

As physicians began to question the value of bleeding, the prescription for massive bloodletting or instructions to bleed the patient to syncope (unconsciousness) steadily diminished. Yet only a few brave spirits actually suggested that bloodletting was unnecessary—and most patients would have felt their doctor remiss if he had not let their blood and dosed them with calomel and other purgatives. In 1848 Dr. John B. Beck, in discussing the subject of bleeding children, strongly favored it, even for newborn infants. He warned his readers, however, of certain peculiarities about children. They could not stand the loss of considerable

blood or repeated bleedings as well as adults, and he had found that bloodletting had a more powerful effect upon their nervous system. He particularly cautioned against the use of leeches and the practice of bleeding children to unconsciousness. His objection to leeches was based on the difficulty of telling how much blood they had drawn. Dr. Beck assured his readers that he was not opposed to bleeding for children's diseases; in fact, he said, the "physician who diseards this agent, understands but poorly his profession or the duty which he owes his patient." He did, however, oppose careless, ill-advised, and excessive bloodletting.¹⁵

Blistering, an acutely painful form of therapy, was well suited for our rugged forebears. It consisted of placing a quantity of irritant (Spanish fly or cantharides was one of the favorites) upon the skin until it caused a second or third-degree burn. The blisters invariably became infected, and the resultant suppuration gave both the physician and his patient concrete evidence that the process was drawing poison from the body. Furthermore, the fact that blistering was painful was even more convincing in an age when the more repulsive a medicine or the more nauseating its taste, the more effective it was presumed to be. Dr. Beck, having encountered the writings of a physician who objected to the practice of blistering infants, felt constrained to set forth his views on the subject. He agreed that blisters affected children sooner and more drastically than was the case with adults, but with remorseless logic he concluded: "If blisters are more powerful in their action upon children than adults, then it would seem to follow that they may be rendered more efficient as a means of cure in their diseases." He admitted, however, that blisters must be used with discretion, and urged his readers not to leave them on too long or to use them unnecessarily.16

Dr. Nicholas Morrell, a physician for the New York Institute for Deaf and Dumb, found blistering to be particularly effective among children in cases where deafness had resulted from searlet or other fevers. Whenever he encountered such a case, "he ordered blisters to be applied immediately, and repeated them once in two weeks with unfailing regularity, gave the syrup of sarsaparilla with Lugol's solution, and nitric or muriatic acid, and occasionally sulphate of quinine, attended every morning to the state of the child's digestive organs, and finally had the gratification to

know that he had succeeded." The phrase attending to "the state of the child's digestive organs" was a cuphemism for a daily purge. Dr. Morrell's experience had convinced him that much deafness was caused by latent or repelled eruptions—and under such circumstances he felt that blistering was the logical remedy.¹⁷

In 1831 United States Army Surgeon Robert W. Wells criticized his colleagues in an article in the New-York Medico-Chirurgical Bulletin. The indiscriminate use of purgative medicines, he wrote, was the worst form of empiricism ever imposed upon the civilized world, yet all writers on both sides of the Atlantic appear to be "infected with the purging mania. . . ." It was not astonishing that the intestinal mucous membranes of fever victims were always found in a state of inflammation. What mucous membrane, he asked, could "withstand the violent remedial measures employed in the treatment of all fevers?" Illustrating his point, he wrote: "In the first place, let a powerful emetic of ipecacuanha and antimony be administered, and then let him be well physiced | sic | with calomel and salts, or calomel and jalap, or with another favorite prescription, senna and salts; let him be denied all solid nourishment, and deluged with lemonade, toast-water and the like, and let him be bled perhaps to the amount of two pounds; —what will his condition be at the end of this period? The answer is obvious."18

The picture drawn by Surgeon Wells was all too accurate, but, as indicated earlier, the succeeding years saw a trend toward moderation. No better example of this can be found than in the medical accounts written sixteen years later of the typhus epidemic which swept through Bellevue Hospital in the summer of 1847. The Resident Physician, Dr. D. M. Reese, reported that bloodletting was never used and that even "a single drastic purge was inadmissible, nor could it be given with impunity." The usual procedure was to prescribe a mild laxative and to give the patient nutritious drinks of oatmeal gruel, rice or barley water, arrowroot and milk, and beef tea. Dr. Lyman H. Stone, on the basis of his experience during the epidemic, also opposed any form of active treatment. Regretfully, he wrote, the "notion that because a man has a fever he must be bled, vomited and purged, and these measures, one or all, repeated again and again as long as the disease

continues, is not so thoroughly exploded and obsolete as many in the profession think." Few patients during the summer's outbreak had been able to tolerate such treatment. He had never seen the disease broken up by general bloodletting and active purgation, but he had "seen the patient's *powers of endurance* effectually *broken up* by those means."²⁰

The efforts within the profession to improve medical practice and avoid excesses only gave added ammunition to the many lay critics. The sight of doctors engaging in bitter exchanges over the relative merits of particular forms of treatment did little to induce confidence in the profession, particularly when the public was already becoming suspicious of the excessive purging, dosing and bleeding. To add to the physician's woes, efforts to improve medical education by the dissection of cadavers for anatomical instruction were constantly frustrated by public opposition to the practice. Prohibited by state laws in many instances, the profession was compelled to engage in body-snatching or to resort to "resurrectionists" or "sack-'em up men," Medical students were often expected to provide their own subjects. The resultant actions caused public outrage and further embittered the public toward the profession. In 1826 the Common Council of New York appointed a committee to confer with the College of Physicians and Surgeons over the matter of body-snatching from private cometeries. A report in the Daily Tribune in 1842, relating the arrest of a carman transporting three bodies to the Medical College, stated that many of the inhabitants "were in a state of high excitement at the discovery of these bodies. . . ." In 1853 "a roaring multitude" of 3,000 rioters sacked an apothecary shop owned by one of the New York surgeons when human bones were reported to have been found in the cellar.21

A bill to legalize dissection almost passed the Legislature in 1850 and a measure was finally passed in 1854. Opposition from the Irish and German immigrant societies hedged the bill with many restrictions. For example, bodies from institutions operated by the Commissioners of Emigration could not be dissected nor could the bodies of any foreigners dying within five years after their arrival. True to the pattern of dissension within the profession, a medical journal complained that the bill would provide the

medical colleges with a monopoly over anatomical material, and its editor demanded equal access to anatomical specimens for all physicians.²²

The discord among physicians was widely discussed by physicians and laymen. A minister sermonizing upon religion and medicine spoke of the difficulties doctors encountered with their patients, but, he added, "Their 'worst foes are those of their own household.' They have to encounter not merely an open and generous rivalry... but the arts of a secret envy, which no sagacity can foil and no merit withstand." The major trials of physicians, he said, arose "from the unprofessional conduct of their brethren." Dr. John Watson, in summarizing the great advances which had been made in medicine up to 1839, also bemoaned the disunity prevalent among the physicians in New York City, attributing it to jealousy, prejudice, and party feeling. "The spirit of discord has been awake, and the poison of its breath has hung upon us," he declared, "until it has withered our institutions almost to extermination."²³

Laymen were all too willing to accept criticism of the medical profession at face value. George Templeton Strong wrote in his diary in 1848 that a man had died in Greenwich Village, "but whether the cholera has the credit of that result or the mustard plaster, the cayenne pepper and the twenty grains of calomel per hour, is questionable." Reprinting an item from the Medical Gazette and Journal of Health which stated that Professor Draper of the New York University Medical College had informed the Academy of Medicine "that the Faculty of the University do not recognize that body," the Daily Times asked: "Who shall decide when doctors disagree?" The same paper published a purported doctor's bill from *Punch* which included charges for such things as "Humph," "Ha," "Oho," "Indeed," and "Well, Well." It was small wonder that a discouraged "Esculapius" wrote to the editor of the Daily Times: "Of all professions, that of Medicine is the most intricate, difficult, unremunerative and disheartening." He advised young men not to be deluded by the success of a few, for if the practice became lucrative, the physician was usually too old to enjoy it. The greatest satisfaction to be derived from practice was the gratuitous attendance on the poor.21

One result of the public suspicion of the medical profession

was the rise of a host of irregular medical cults. The two most successful were the Thomsonians and the homeopaths. The former were the followers of Samuel Thomson, a New Hampshire herbalist, who advocated the use of botanical drugs. Thomson decried the use of what he termed the poisonous mineral therapeutics used by the regular physicians and argued that herbals were Nature's own remedies. Herbalists had always supplied a good part of early American medical care and Thomsonianism was well within the American folk tradition. Homeopaths, the followers of the German physician, Samuel Hahnemann, offered a more sophisticated form of medical treatment, but they, too, were able to capitalize upon the popular resentment against the excessive doses of calomel and other harsh mineral therapeutics prescribed by the regular physicians. The homeopathic theory was based on the doctrine of similars and a belief that the efficacy of a particular drug bore an inverse relationship to the amount prescribed. Carrying this latter theory as far as possible, the homeopaths prescribed such minute dosages as to leave the cure almost completely to nature.

Both groups eschewed bloodletting and the violent purging, vomiting, blistering, and sweating characteristic of orthodox medicine, and, not surprisingly, the recovery rate of their patients was frequently far higher than for those patients treated by the customary methods. Although the botanists and Thomsonians won few converts among orthodox practitioners, homeopathy had considerable appeal. The success of moderate homeopathic practices led many regular doctors to give homeopathy serious consideration. For example, the Medical Society of the County of New York bestowed an honorary membership upon Dr. Hahnemann in 1832. A few years later, as the regular profession found itself losing ground to homeopaths and other irregulars, the Society voted to rescind the honor.²⁵

The rise of the irregulars had a profound impact upon American medical practice. In the first place, the success of unorthodox practitioners in curing patients without drastic bleeding, purging, and vomiting was a factor in forcing the regulars to moderate their practice. Second, the irregulars, particularly the Thomsonians, led the fight in New York to eliminate the medical licensure laws. Their success in these endeavors gave a major impetus to the movement to organize the American medical profession on a na-

tional basis in the 1840s. While the American Medical Association was concerned with medical education and professional standards, there can be little doubt that one of its major aims, if not its chief one, was to present a united front against the irregular practitioners.

In part because of low educational standards and licensure laws which virtually permitted anyone to practice, the ratio of doctors to population in New York City was quite high and medical income correspondingly low. With a population of slightly over half a million, a census in 1850 showed that the city had 5,060 physicians, 54 surgeons, 1,082 apothecaries, 8 oculists, 563 dentists, and 26 patent medicine makers. With one physician for every 100 residents, it was obvious that few of them could become wealthy.

One problem besetting the profession was the woeful state of medical education. During the first half of the nineteenth-century medical schools were still looked upon as supplementary to the apprentice system. The annual sessions lasted from three to four months, and the maximum requirement was attendance at two sessions plus one to two years' study with a practicing physician. Ordinarily, a student with two or three years' experience with a licensed practitioner was required to attend only one series of lectures, no great loss since the same lectures were given year after year. Few physicians practicing in 1825 had attended any medical school.

In the entire state of New York only three medical schools were open at this time, one of which, the College of Physicians and Surgeons, was located in New York City.²⁷ The situation improved in 1841 with the opening of the Medical Department of the University of New York.

In 1847 the newly formed American Medical Association, after a heated debate, recommended extending the academic year to five months. The College of Physicians and Surgeons was the first New York school to conform to this radical innovation. In 1850 New York medical educators suddenly became aware of the rise of sectionalism. A wistful editorial in the October, 1850, issue of the New-York Medical Gazette and Journal of Health complained that southern medical students were being enticed to Philadelphia schools on "a silly and groundless report that one or

more of our colleges in New York, intended to admit colored students." The editorial plaintively mentioned the injustice that New York schools should be criticized by the abolitionists for not taking Negroes, and by the South on the grounds that they did. The medical professors in New York, the editor declared, were "as free of any taint of abolitionism as are the professors of the schools at Philadelphia or elsewhere." Somewhat equivocally, the editor then said that Negroes were excluded from New York schools only to protect them from "degrading indignities" and went on to regret that New York could not share the honor "of sacrificing prejudice when it stands in the way of humanity." Despite their worries, the New York medical schools were relatively unaffected when southern medical students in Philadelphia voted to depart en masse in 1859. A newspaper report in January of 1860 said that fourteen southern students from one New York school had voted to return to the South, but that only three had left, and one of them had already returned.28

In 1850 a third medical college made its appearance in the city, the New York Medical College. In the fall of 1851, 445 medical students were enrolled in the three city schools, 197 in the College of Physicians and Surgeons, 170 in the University of New York, and 69 in the New York Medical College. An attempt was made to establish the American College of Medical Science in 1858, but the effort seems to have proved abortive. Bellevue had long been a teaching institution, and a notice in 1857 stated that clinical instruction would be given in conjunction with the medical lecture courses. The next logical step was to incorporate the Bellevue Hospital Medical College of New York City in April of 1861. One interesting provision in the act of incorporation stated that nothing in it should be construed as excluding from the Hospital students of the homeopathic college chartered in 1860. This latter institution was established in 1859 as the New York Homeopathic Medical College and Hospital. The growth of Brooklyn in these years led to the founding of the Long Island College Hospital in Brooklyn, which, like Bellevue, combined both hospital and medical training facilities.29

Strides were also taken in pharmacy and dentistry during these years. In 1829 the College of Pharmacy of New York City was organized, although it was not officially chartered until 1831. The

following year a state law required that all druggists in New York City must have attended two or more sessions at the College of Pharmacy, have a diploma from some other regularly constituted college of pharmacy, or else have passed an examination by the county medical society. With the founding of the New York Academy of Medicine in 1847, a close collaboration developed between the Academy and the College of Pharmacy in the fight against spurious and adulterated drugs. Reflecting the growing need for qualified pharmacists, an act incorporating the Brooklyn Pharmaceutical Society in 1862 authorized the Society to build a school of pharmacy and to grant diplomas. In the field of dentistry, the College of Physicians and Surgeons established a professorship of dental medicine and surgery in 1852. Thirteen years later, in 1865, the New York College of Dentistry was organized.³⁰

The valiant efforts made by the New York medical societies to establish a licensure law early in the nineteenth century were largely wasted. Although the county medical societies remained in control of the licensure procedure, loopholes in the law enabled almost any and everyone to practice. According to the licensure law of 1827, only the local medical society could issue a license, and to practice without one was a misdemeanor. However, herb and root doctors were exempted, and local courts rarely ever convicted irregulars. In 1830 an amendment substituted a purely nominal penalty of \$25 for practicing without a license, and continued to exempt herb and root practitioners. Spearheaded by the Thomsonians and other irregulars, a new drive in 1844 led to a measure which virtually eliminated all restrictions upon quacks and irregulars. The Thomsonians and their cohorts were aided in this by the rising tide of opposition to all government controls and by the growing suspicion of regular medical practitioners. Walsh states that it was passed under the specious pretense of making unlicensed practitioners liable for malpractice. In despair, one of the medical committees fighting for a licensure law ruefully admitted: "That restless agrarian spirit that would always be leveling down, has so long kept up a hue-and-cry against calomel and the lancet, that the prejudices of the community are excited against, and their confidence in the medical profession greatly impaired, and no law could be enforced against the empiric and the nostrum vendor. . . . "31 The gutting of the licensure laws meant that for thirty

more years the practice of medicine in New York was open to anyone.

The disunity in the New York City medical profession was clearly evident in their failure to develop an effective medical association during the first half of the nineteenth century. The New York Medical Society appears to have played a negligible role in professional affairs in the period after 1825, and of the six or seven new associations in these years, the only one which held promise was the New York Academy of Medicine, officially founded in 1847. As of 1825, in addition to the dormant New York Medical Society, the one other medical organization of any consequence was the New York Kappa Lambda Society of Hippocrates, a group which had been created primarily for social purposes. An anonymous pamphlet in 1839 charged that the Kappa Lambda clique in the New York Medical Society dominated all medical appointments in the city and in the medical college. In the following years a number of small medical groups came into existence. The New York Medical and Surgical Society was organized in 1835 to promote the advance of medical science. Nine years later, 1844, the New York Pathological Society was established. Speaking of this group in 1852, Dr. Thomas Cock, president of the New York Academy of Medicine, declared that no medical society in the city "has contributed more largely to medical improvement than this." From 1847 to 1852 no fewer than five additional medical groups came into being-the New York Academy of Medicine, the New York Medical Association, the Society for Medical Inquiry, the Harveian Circle, and the Society of the German Physicians of New York City.32

The multiplicity of these organizations indicates that no one body existed which could speak for the profession. In 1855 the German Medical and Surgical Society was organized, but whether this was a second society of German physicians or a reorganization of the first is not clear. In the late 1850s, in response to an 1857 state law authorizing the establishment of county homeopathic medical societies, a city group was established. The incorporation of the Eclectic Medical College of New York City and the Eclectic Medical Society of New York State in 1865 added still another group of unorthodox practitioners to vie with the regulars for public support. The dentists, whose effective organ-

ization in the United States antedates the medical profession, had organized a state society in 1846, and maintained an effective unit within New York City from that date onward.³³

The outstanding medical association of these years was the New York Academy of Medicine. The first organizational meeting was held on December 12, 1846, in response to a newspaper appeal by Dr. Valentine Mott of the Medical Department of New York University, Dr. Alexander H. Stevens of the College of Physicians and Surgeons, and Dr. Isaac Wood representing the County Medical Society. The announced purpose was to combat quackery and restore public confidence in the medical profession. The Academy officially came into being on January 6, 1847. Within a year, the original 185 members grew to 300, but the group was soon plagued with internal problems. The rivalries and jealousies within the ranks made it almost impossible to elect officers in 1848 until many ballots had been taken.³⁴

During its first year the Academy considered resolutions on such matters as the need to establish a laboratory, a committee on public health, a section on meteorology, and an institution for training idiots. In asking for the establishment of a committee on public health, Dr. John H. Griscom offered a resolution which stated that "it is not only in the province of this Academy, but is its duty, to pay attention to every thing which threatens the public health & which excites the fears & action of the community."35 Many committees were established in the first year or two, but in June of 1850 the number of permanent scientific committees was reduced to seven, one of which was the committee on public health and legal medicine.

This auspicious start was no guarantee of continuing success. The years from 1851 to 1855 represented a low point for the society. Attendance was poor, and the Academy became embroiled in a clash with Dr. Mott and the Medical Department of New York University. On June 7, 1854, a resolution, noting the lack of attendance at meetings of the scientific committees, asked for a roll call at each committee meeting. Significantly, the motion lost. In 1852 a series of resolutions, some of which were aimed at Dr. Mott, denounced the gratuitous medical service given to the poor by the medical college clinics and the public dispensaries. Dr. Mott had irritated some of the members by publishing a notice addressed

to the poor, stating that he and his colleagues in the medical school would treat them free of charge. One of the resolutions called for total abolition or else sweeping reform of all public dispensaries. Another declared that all gratuitious forms of medical aid, wherever tendered, "savor of quackery. . . ." While these extravagant resolutions were tabled, the incident did little to improve relations between the regular profession and the public. The editor of a medical journal, defending the Academy from a charge that it had been diverted from its original purposes, explained that the Academy "has only failed in accomplishing its design by reason of the refusal of so many worthy and reputable members of the profession to enroll themselves among its members." The editor did not explain why this was the case, but the attacks upon Dr. Mott, one of the most eminent practitioners in the city, give some clue to the answer. The

The work of men such as Drs. Gardner and Griscom made the Academy's health committee one of its most successful agencies. Studies of milk, food, the dispensary system, and many other topics were made by members of this committee. The committee also actively promoted the sanitary reform movement and helped to arouse the Academy's support for it. The minutes for January 19, 1859, state that Dr. James Watson in his inaugural address "made special allusion to the question of sanitary reform. . . ." Judging by the Academy's minutes, however, little was accomplished in 1850 and 1860. Relations with the public suffered another blow in 1861 when attempts were made to exclude reporters from meetings of the Academy. A motion was passed that the transactions of the Academy's meetings could not be reported by members of the press or by members of the Academy for the newspapers. To make matters worse, Dr. Gardner, who had performed veoman service for the Academy in the area of public health, was bitterly attacked for his article published in the Knickerbocker Magazine.37

In 1862 the Academy strongly supported the proposed Metropolitan Health Bill, and rejoiced over the enactment of a law designed to prevent the adulteration of milk, a project for which individual members of the Academy had been fighting since 1847. In connection with the 1862 milk law, Dr. Percy, one of the advocates of the bill, successfully moved that the Academy appoint

a three-man committee to see that the law was enforced. Ironically, later this same year, Dr. Percy resigned over the issue of whether or not an article he had submitted for publication in the *Transactions* of the Academy should also be submitted for an American Medical Association prize.³⁸

The record of the Academy of Medicine during its first twenty years was spotty. It was established at a time when the profession was both highly individualistic and had little sense of professional unity, a fact made quite evident by the personality clashes within the Academy, Committees and individual members of the Academy investigated a wide range of medical and health matters, and their findings served to enlighten both the public and municipal officials. Academy members were active in the Sanitary Association and other public health organizations, and on occasions the Academy played an active part in promoting reforms. On the other hand the divisions within the organization often prevented concerted action. Individual members played a significant role in the passage of the Metropolitan Health Act of 1866, but the subsequent claims that the Academy of Medicine was primarily responsible for the act are simply not true. This statement does not detract from the fact that the Academy of Medicine did help to initiate the sanitary reform movement, and the organization deserves much of the credit for raising standards and creating a professional spirit within the New York City medical profession.

Notes to Chapter 21

- 1. N.-Y. Med. & Phys. Inl., VII (1828), 174-75.
- 2. Ibid., 176-85.
- 3. N.-Y. Inl. of Med. & Coll. Sci., IX (1847), 400.
- 4. N.-Y. Inl. of Med. & Coll. Sci., new series, VI (1851), 11-15.
- 5. Ibid., XV (1855), 258-60.
- 6. N.-Y. Jul. of Med. & Coll. Sci., IX (1847), 122-25.
- 7. N.-Y. Med. Gav. & Int. of Health, 1 (1850), no. 11, pp. 166-68; no. 13, pp. 106-07.
- 8. Ibid., no. 9, p. 132.
- 9. See N.-Y. Med. & Phys. Int., new series, 1 (1829), 281-86.
- N.-Y. Int. of Med. & Coll. Sci., new series, XV (1855), 140-44; N.-Y. Med. Gaz. & Int. of Health, I (1850), no. 12, p. 181.
- N.-Y. Inl. of Med. & Coll. Sci., new series, II (1849), 375-77, VI (1851), 229.

- 12. N.-Y. Med. Gaz. & Inl. of Health, II (1851), no. 1, pp. 1-2; no. 15, p. 170.
- 13. Letters of John Pintard to his Daughter, III, 173.
- 14. Ibid., III, 226-27, 287.
- 15. N.-Y. Inl. of Med. & Coll. Sci., X (1848), 308-15.
- 16. Ibid., IX (1847), 7-14.
- 17. Ibid., 173-75.
- 18. New-York Medico-Chirurgical Bulletin, I (1831), 217-21.
- 19. N.-Y. Inl. of Med. & Coll. Sci., IX (1847), 266-70.
- 20. Ibid., X (1848), 168-77; IX (1847), 254-56.
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- 22. Daily Times, October 18, 1853, January 21, February 6, 1854; N.-Y. Med. Gaz. & ful. of Health, V (1854), no. 3, p. 133.
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 Daily Times, June 23, 1852, March 4, 1853, March 2, 1857.
- Medical Society of the County of New York, Minutes, 1806-1878 (New York, 1880), I, 509, II, 638.
- 26. N.-Y. Med. Gaz. & Inl. of Health, V (1854), 423.
- 27. N.-Y. Med. & Phys. Jul., VI (1827), 162.
- 28. N.-Y. Med. Gaz. & Int. of Health, I (1850), no. 14, p. 213; Daily Times, January 17, 1860.
- 29. Exening Times, November 21, 1851; N.-Y. Med. Gaz. & Jnl. of Health, I (1850), no. 1, pp. 4-5; N.Y. State Lows, 81st sess., chap. 19, March 6, 1858, pp. 33: 37; chap. 85, April 2, 1858, pp. 177-79; 84th sess., chap. 130, April 3, 1861, pp. 248-49.
- 30. N.-Y. Med. & Phys. Jnl., new series, 1 (1829), 220; N.Y.A.M., Minutes, September 1 October 6, 1847, pp. 65-66, 68, 72; Daily Times, February 28, 1852; N.Y. State Laws, 54th sess., chap. 264, April 25, 1831, pp. 329-30; 55th sess., chap. 326, April 26, 1832, p. 566; 85th sess., chap. 140, April 4, 1862, pp. 305-07; 88th sess., chap. 264, March 31, 1865, pp. 425-26.
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- 32. A History of the New-York Kappa Lambda Conspiracy (New York, 1839), 30-31; Thomas Cock, Inaugural Address to the N.Y.A.M. (New York, 1852), 18-19.
- 33. N.-Y. Int. of Med. & Coll. Sci., new series, NV (1855), 158; N.Y. State Laws, 80th sess., chap. 384. April 13, 1857, 1, 790; 88th sess., chap. 542, April 22, 1865, pp. 1028-30; chap. 562, April 24, 1865, pp. 1130-32; Daily Tribune, September 13, 1849, September 10, 1851.
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- 36. Ibid., April 7-21, 1852, pp. 288 91, June 7, 1854, p. 388; N.-Y. Med. Gaz. & Jul. of Health, III (1852), no. 2, p. 17.

The City Overwhelmed

^{37.} N.Y.A.M., Minutes, January 19, 1859–January 16, 1861, pp. 575, 623–24; Van Ingen, New York Academy of Medicine, 104–11.

^{38.} N.Y.A.M., Minutes, May 7, 1862, p. 664; Van Ingen, New York Academy of Medicine, 123.

22

The Rise of the Hospital

In 1825 hospitals were still places of refuge for the sick or for homeless strangers. Operating rooms were a rarity, and on the few occasions when surgery was deemed necessary, it was usually performed in open wards without benefit of anesthesia. The largest hospital in the city as the second quarter of the century opened was the oldest institution, the New York Hospital. Although a major hospital with over 2,000 admissions, it largely provided custodial care. In the year 1825 a total of 2,139 patients were admitted; 270 of these were insane who were treated at Bloomingdale. Of these patients, 1,367 were discharged as cured, 164 as relieved, and another 187 died. The lying-in-ward of the Hospital admitted 30 parturient women, of whom two died.

The succeeding years saw the rapid development of surgery, a development which was given a great impetus through the introduction of anesthesia in 1846. Four years after this auspicious event, one of the medical journals mentioned that the New York Hospital, because of its central location, had acquired a reputation as the best hospital for surgical practice. It was also the institution which received most of the accident and emergency cases. In September of 1851 the Hospital register showed 347 admissions and 42 deaths. Many of these fatalities were attributed to railroad accidents and sunstroke. Of the 316 patients under treatment on September 30, 84 were fracture cases. Considering the relatively few surgical patients in most general hospitals, the number of fracture cases was surprisingly high. The Hospital maintained an excellent rating in New York. A newspaper editor described it as "a model institution, . . . far superior to any other we have ever seen in any city. . . . "2 Discounting the editor's civic pride, the New York Hospital was justifiably considered the outstanding city institution.

Although the New York Hospital received over \$12,000 a year from the state to provide medical care for the poor, ordinarily it did not offer a haven for immigrants. Medical care for this group was provided first in the Marine Hospital (those arriving with contagious diseases) or by the Almshouse Hospital and later by the Commissioners of Emigration. In September of 1851, however, because of the great number of immigrant sick and the shortage of hospital accommodations, the Commissioners of Emigration arranged for the New York Hospital to care for 60 immigrants. In consequence, typhus, an endemic disease on the immigrant vessels, was introduced into the wards. The following March, the Hospital's Board of Governors decided to refuse admittance to any patient suffering from "Ship or Typhus Fever." The governors explained that the institution was a general hospital for accident and noncontagious disease cases, and that the exclusion of those sick with typhus was for the protection of the other patients.3

In 1852 the New York Hospital staff included a house physician, 2 consulting physicians, 4 attending physicians, 2 house surgeons, 3 consulting surgeons, 6 attending surgeons, and an apothecary. At the same time, the Bloomingdale Asylum, the insane division, employed a physician, a warden, a matron, and an apothecary. The Hospital had long been a teaching institution, and it continued to serve in this capacity. By the 1850s the New York Hospital was no longer the largest hospital in the city, having fallen well behind the Ward's Island complex and Bellevue, but it was probably the best.

The second major hospital was the Almshouse Hospital at Bellevue. In response to complaints about the lack of provision for isolating sick paupers, the Common Council had erected a separate hospital building at Bellevue. This four-story structure, completed in 1826, was designed to handle both the physically and mentally ill. Two of the stories were allocated to the insane, and as soon as the building was opened, over 100 mental patients were admitted. The general wards, too, quickly filled beyond their normal capacity, and the resultant crowding enabled typhus to sweep through the Hospital. To make matters worse, it was "impossible to prevent the yells and cries of the lunatics from reach-

ing the ears of the sick." Despite repeated demands for a separate insane asylum, relief was not granted until 1839, when an insane asylum—the first municipal asylum in the country—was built on Blackwell's Island.

Beginning in 1816 orphans and pauper children had been lodged at Bellevue. Although housed separately, they were surrounded by jails and other institutional buildings. Suggestions that the children should be removed from this atmosphere went unheeded until large-scale ophthalmia epidemics developed in the late 1820s and early 1830s. These outbreaks have been discussed in the chapter on epidemic diseases; suffice it to say here that in 1831–1832 the healthy children were moved to new facilities on the Long Island Farms in Oucens.

The commissioners of the Almshouse during these years were gradually building a number of small hospitals. In 1831 a small structure had been erected on Blackwell's Island to isolate children afflicted with ophthalmia. When the Long Island Farms institutions were established and the eve problems brought under control, the Common Council voted to use the Blackwell's Island hospital for smallpox patients. Subsequently, a Penitentiary Hospital was erected on the Island along with a new children's or nursery hospital. These buildings were in addition to the insane asylum, completed in 1839. The able Dr. Nicholas Morrell, who had been responsible for quelling the ophthalmia outbreaks, presented a critical report of most of these facilities in 1843. He described the Smallpox Hospital as a "mere shanty," which, although designed to accommodate 12 patients, generally held from 20 to 40. He pointed out that sick children from the Long Island Farms had to be conveyed in open boats to either Bellevue or Blackwell's Island. In citing case fatality statistics, Dr. Morrell noted that Bellevue had lost one out of six. As might be expected, the highest death rate occurred in the Smallpox Hospital, where more than one out of three patients succumbed."

The crises precipitated by typhus and ophthalmia were surmounted by the early 1830s, and Bellevue and its allied hospitals rocked along at an even pace until the tide of immigration once again focused attention upon hospital problems. During these years political appointments and meddling characterized the municipal hospitals. A prominent New York physician who witnessed

the political changes observed that even "the soundest Whiggism and most radical democracy often proved equally ignorant of the principles of hygiene and curative measures." In 1846 the Common Council appointed a ten-man committee to study the medical care at Bellevue and other municipal institutions. This group, which included some of the outstanding doctors in New York—J. W. Francis, Joseph M. Smith, Valentine Mott, D. M. Reese, and others—recommended creating two administrative divisions, one for Bellevue and another for the institutions on Blackwell's Island. Under the new organization, Bellevue was to have a resident physician, 6 visiting physicians, 6 visiting surgeons, and 8 assistant resident physicians. A separate staff of 10 medical men was recommended for the institutions on Blackwell's Island.

The Council accepted the recommendations and appointed Dr. D. M. Reese, a member of the medical committee, as Resident Physician. From the time he assumed control, Dr. Reese fought to improve and enlarge the Hospital's facilities. In May of 1847 he wrote to Dr. A. F. Vaché, the city's Resident Physician, bitterly denouncing the intolerable overcrowding in the Hospital's wards. Bellevue, Reese stated, contained 847 patients, 707 of whom were in beds and cots, and another 140 lying on the floor. In one room alone, he noted, there were 187 females suffering from ship fever.

Under Reese's capable direction, a general improvement took place. A grand jury visiting the Hospital in July of 1847 praised the "energy and skill" of the Resident Physician. It found the 800 patients well cared for and the buildings and grounds clean and neat. Answering a newspaper criticism of his administration, Dr. Reese pointed out that when he assumed charge, Bellevue was flooded with typhus cases. Over 400 typhus patients were in the Hospital, and new cases were coming in at the rate of 60 a day. The Hospital was averaging 900 patients a day, half of whom were suffering from typhus. Probably unhappy over the climination of politics from the Hospital administration, one alderman accused Reese of selling bodies for purposes of dissection or experimentation, but a Common Council committee investigating the charge completely exonerated the doctor.8

The following year, 1848, the medical board of Bellevue complained bitterly about the use of prisoners as orderlies and nurses. These prisoners were described as "irreclaimable inchriates and prostitutes," who drank up the prescriptions for liquor and who paid no heed to the sick. The medical board also objected to the practice of admitting venereal disease patients to Bellevue, thus forcing, as the board members stated, virtuous indigent females to consort with the deprayed. They recommended that only patients who had acquired the disease innocently should be treated at Bellevue, the rest were to be sent to the Penitentiary Hospital. The board, after pointing out that medicines and liquors were frequently adulterated, urged that purchases be made only from reputable dealers. The Common Council acceded to these requests, and Dr. Reese instituted the reforms. A medical editor, commenting upon Dr. Reese's report for 1848, noted that the death rate at Bellevue had fallen during the past twenty years from over 20 to less than 14 per cent. Among the improvements, he noted, was the hiring of respectable and honest nurses in the place of convicts and the replacement of penitentiary laborers with female paupers.⁹

A major improvement in municipal facilities for child care at this time was the erection of seven new nursery buildings on Randall's Island. The same grand jury which had investigated Bellevue in 1847 reported of the nursery institutions on Blackwell's Island that many of the young wards, though well-fed and well-clothed, were still suffering from serious eye disorders. The new separate structures were specifically designed to facilitate child health care by permitting the isolation of those with, or suspected of having, communicable diseases. One was a quarantine building into which all new admissions were placed. Here the children were bathed and given hair cuts, fresh clothing, and a physical examination. Other buildings were used for children with diseases such as smallpox and ophthalmia.¹⁰

The influx of immigrants accentuated the perennial problem of smallpox. The dispensary vaccination program had prevented major epidemics among the native-born Americans, but the addition of thousands of nonimmune Europeans, some of whom were already infected with smallpox, created a serious threat to the city's health. In 1844 a private group had chartered the New York Vaccine Institution whose purpose was to promote vaccination "especially among sailors, emigrants, indigent persons . . . and children." The pressing need, however, was to remove small-pox cases from densely populated sections. In September of 1848,

the Common Council responded to a plea from the medical board of the Almshouse Department by appropriating \$40,000 to build a Smallpox Hospital on Blackwell's Island. During the rest of this period, admissions to the Smallpox Hospital ranged from 100 to 400 per year. Although there was some criticism, the Hospital seems to have functioned satisfactorily. A newspaper account in 1857 stated that it was well-organized, seeluded, and offered the best of care. Blackwell's Island, as already mentioned, contained the male and female penal hospitals as well as providing an isolation center for smallpox. The total number of patients treated in the 1850s ranged from 2,000 to 4,000, and the figure climbed to 6,000 in the early 1860s.¹¹

In 1848 two administrative changes were made at Bellevuc. The Resident Physician was replaced by a warden, and a Board of Governors, numbering ten, was appointed to administer the Hospital. In light of the Common Council's record during these years, removing Bellevue from the direct control of the Council may have been advantageous, though the replacement of the Resident Physician by a nonmedical warden was a debatable step. Six years later, however, the editor of a medical journal asserted that the system had worked quite well. The Board of Governors was sharply criticized in 1850 for farming out infants from the Almshouse. One of the foster mothers, whose charges frequently died, was accused of burying them under six inches of dirt, where their bodies were ravaged by hogs and dogs. The supervision of these women was so lax that they were even permitted to make out death certificates for infants who died under their care. It is not clear whether the Board rectified this situation, but it did collaborate with the Commissioners of Emigration in making a pioneer survey of institutional dietetics. Dr. John S. Gould was appointed to study dietary and sanitary conditions in various large institutions in the United States. In his report Gould pointed out that nothing had been done on this subject and that he had been compelled to break new ground. Gould's recommendations generally followed the pattern set earlier by Dr. Griscom-cleanliness, good ventilation, and well-balanced meals. With reference to the last item, Gould presented a number of specific diets for various wards of charity.12

The Penitentiary Hospital on Blackwell's Island came under

fire during 1853. In accordance with the suggestions of Dr. Reese, nearly all venereal disease patients were treated there; indeed, the Penitentiary Hospital was the city's only venereal disease facility. The Hospital had accommodations for 400 patients, and during 1852 almost 1,000 of those admitted were suffering from venereal disease. A newspaper editorial claimed that police officials accepted bribes from bordello keepers and that the Hospital was simply "curing syphilis at the city's expense for the benefit of the landladies of brothels. . . ." The editor was particularly incensed over the fact that the girls, once pronounced cured, had no place to go except back to the brothels. ¹³

By the mid-1850s Bellevue was a major American hospital treating 4,000 to 5,000 patients annually. A new wing completed in 1855 had added 300 beds, bringing the total to 1,200. The lyingin wards could accommodate 200 patients annually, and the construction of a new morgue in 1856 greatly facilitated post-mortem examinations. After the reorganization of the institution's administration following the committee recommendations in 1846, the annual death rate had fallen steadily, despite the impact of thousands of undernourished, typhus-ridden immigrant patients. The case fatality rate fell from 17 per cent in 1847 to 16 per cent in 1848, 13 per cent in 1849, and then leveled off at around 10 per cent for the next few years. In 1854, for example, 7,033 patients were treated with a loss of 725. 14

Reflecting the city's growing population, the various municipal hospitals treated over 50,000 patients in 1854. The three hospitals operated by the Commissioners of Emigration—the Emigrant Hospital, the Refuge Department, and the Marine Hospital—treated 34,439, of whom 2,616 died. The governors of the Almshouse whose report covered nine institutions, reported a total of 22,000 patients with a death toll of 1,821. The figures for the main institutions are as follows: Bellevue, 7,033 patients and 725 deaths; Almshouse Hospital, 4,724 patients and 288 deaths; Penitentiary Hospital, 4,058 patients and 144 deaths; and the Nursery Hospital, 2,199 patients and 208 deaths. The remainder were housed in the Smallpox Hospital, the Work-House, Colored Home, Colored Orphan Asylum, and the Lunatic Asylum. In addition to the patients in the municipal institutions, 3,680 were treated in the New York Hospital; 3,000 in the New York Eye Infirmary; and

another 1,234 in the New York Ophthalmic Hospital.¹⁵ These figures do not include individuals treated in private orphanages and the many other charitable institutions.

The municipal hospital facilities steadily increased in size, if not in quality, in the following years. The addition of a new wing to Bellevuc in 1857 increased the number of beds to 1,500. At the end of this year, some 1,300 children were cared for in the Nurseries on Randall's Island, and 627 patients were provided for in the Lunatic Asylum. In 1855 Coroner John Hilton accused the Bellevuc officials of sending dying patients to the hospital on Blackwell's Island in order to make the Bellevuc case fatality ratio look better. Bellevuc officials answered that only chronic and incurable cases were sent to Blackwell's Island. This action relieved overcrowding and permitted better treatment for the remaining patients. The explanation sounds reasonable, although some doubt is east upon it by subsequent disclosures about the Hospital.

Despite the advances which had been made, municipal hospital conditions, on the whole, remained intolerable. In 1860 Bellevue's ten-member Board of Governors was replaced by a fourman Board of Commissioners of Public Charities and Correction. Shortly after the four commissioners assumed control, a highly emotional newspaper story told of a newborn infant in Bellevue being bitten and lacerated by rats, which were said to "have full possession of the building." The new commissioners' description of Bellevue bore out the newspaper story; the building was ratinfested; the bathrooms and water closets were not functioning; the water and heating systems were completely inadequate; and the administration was inefficient. Patients were admitted to the Hospital and assigned to wards without examination. Their dirty, lice-infested clothes were left on or under the beds, with the result that the male wards had become so badly infested with lice that it was necessary to burn all bedding and clothing. The storeroom was small and poorly ventilated; visitors were permitted to bring liquor into the wards; and the lack of an accounting system made it impossible to hold the nurses and orderlies responsible for the food and liquor prescribed for patients. Lest New Yorkers of today think such problems are past, they have only to recall the 1966 exposé of municipal hospital conditions in the Times and other newspapers to realize how little the city has changed from a century ago. Incidentally, in the process of caring for these patients, the physicians prescribed—or at least the medical budget showed -1.377 gallons of liquor and wine. This should not be construed as a reflection on the doctors, for in the ninteenth century, alcohol, in one form or another, always headed the list of therapeutics.¹⁷

The new Board promptly instigated a massive reorganization, cleanup, and rehabilitation program. An honest and efficient administration was installed, which first thoroughly cleaned and put all buildings into good condition. New washrooms were added to the wards; an admitting section was established where new patients were examined, bathed, and provided with clean hospital gowns before assignment to specific wards; a gate-house was built where visitors could be examined for liquor; all alcohol for the patients' use was placed under the charge of the apothecary; and a new kitchen and storchouse were installed. Over and above these basic reforms, the Board sought to bring the Hospital more into line with new surgical and medical knowledge. Four new surgical wards were opened, and construction was pushed on an additional hospital on Blackwell's Island. The Board suggested in its first report that a special hospital was needed for consumptive patients, but expressed the hope that the enlarged hospital facilities would help to reduce the mortality rate among this group of patients. Rather significantly, of the 1,013 deaths which occurred in Bellevue during 1860, no fewer than 361 resulted from phthisis (tuberculosis). The total of a little over 1,000 deaths represented almost 9 per cent of the 11,411 patients treated during the year. The new commissioners were able to effect this major overhaul by a wise use of available funds and the elimination of many unnecessary items from the budget. For example, they drastically curtailed the amount spent by the previous board for carriage and entertainment, which resulted in a saving of \$15,000 on this one item alone.18

While reforming and renovating Bellevue, the Board simultaneously rehabilitated the other city institutions under its control. Repair, rehabilitation, and reorganization affected all eleven institutions under its jurisdiction. The Lunatic Asylum was renovated, and construction on an Idiot Asylum was started. A Foundling Hospital was planned, and extensions and additions were made to many of the Nursery buildings. Among the new facilities were

play and exercise rooms and a new laundry machine. Improved food and better facilities in the Colored Home and the Colored Orphan Asylum dramatically reduced the number of deaths. This program reduced the ratio of deaths in the latter asylum to only 1 in 40, the lowest mortality, the Board stated, since the institution was founded.¹⁹

The 1860s started off auspiciously under the new Commissioners of Charities and Correction. Sanitary reform was in full swing, and the city's hospitals could scarcely help benefiting from it. The outbreak of war and the heavy casualties made the public even more conscious of the need for hospitals. Large numbers of middle and upper-class women volunteered to work with the sick and wounded soldiers, and their presence in the hospitals proved the stimulus necessary to improve care for all patients. In 1862 Bellevue was expanded and several wards set aside for the military. On New York, as in many other cities, the tragic slaughter of the Civil War led to an expansion and an improvement, at least temporarily, of the available hospital facilities.

The Marine Hospital and Seamen's Retreat

The Marine Hospital originally had a dual purpose: it served as a quarantine hospital to protect the city from contagious or communicable disorders, and, at the same time, was intended to provide medical care for sick and disabled seamen. As the amount of shipping and the number of immigrants coming into the city increased, the funds from the head tax on all persons entering the harbor were well in excess of those needed to maintain the Marine Hospital. There would have been no surplus had the policy not prevailed that once the newly arrived immigrants passed the cursory health inspection, they could no longer use the facilities of the Marine Hospital. The result was that, until the passage of the Immigration Act in 1847, immigrants received little special attention in the way of medical care. The excess funds from the head tax were distributed by the Common Council among various charitable institutions in the city.

The Marine Hospital was designed primarily as a communicable disease institution and was operated only for such disease cases. Ailing seamen, whose head tax entitled them to medical care, were usually sent to either the New York Hospital or Bellevue, where their expenses were paid by the health commissioners. In 1831 a state law separated the head tax collected from immigrants from that collected from crewmen. It also provided for building a Seamen's Retreat on Staten Island. The health commissioners were to continue collecting the head tax from passengers, but the tax upon seamen was to be collected by the trustees of the Seamen's Retreat. The original act provided that the trustees were to pay the health commissioners for all seamen treated at the Marine Hospital; a subsequent amendment in 1832, however, relieved them of this obligation. A small building was acquired during 1831 for use as a seamen's hospital. As the need for better facilities became evident, in 1836 the trustees were authorized to borrow \$25,000 from the health commissioners to complete a new hospital. When the sum proved insufficient, the trustees were permitted to borrow another \$20,000.21

In 1831 a separate hospital for Negro seamen, the Colored Retreat, was established by the trustees of the Scamen's Retreat. Thus three institutions provided medical care for ship crewmen and passengers during these years: two hospitals for seamen and the Marine Hospital for individuals arriving in the port with communicable diseases. The care provided by these institutions seems to have been well up to contemporary standards, largely as a result of ample funds provided by the head tax. In 1834 a Common Council committee appointed to look into the surplus Marine Hospital funds recommended that two-thirds be turned over to the city, and the other one-third to the trustees of the Seamen's Retreat. In making this recommendation, the committee pointed out that the city was already spending large sums to support sick and unemployed immigrants. To relieve the strain on the city's resources, the committee also urged that the Marine Hospital be kept open on a year-round basis for the reception of all immigrants with contagious diseases. The Common Council happily accepted these recommendations and submitted them to the Legislature, but there the matter rested.22

As the stream of shipping and immigration widened, the responsibilities of the Marine Hospital administration grew commensurately. During the 1820s the annual admissions averaged between 350 and 400. By 1835 the figure had increased to about 500, and in the next five years it doubled. In 1834 Health Officer Doane

again recommended that for a period of one year or more after arrival, sick immigrants be admitted to the Marine Hospital. He estimated that this change would increase the number of admissions to the Hospital by about 1,000 a year. Most of these infected individuals were crowded into immigrant boarding houses where their diseases threatened both immigrants and native citizens. Removing these sick to the Marine Hospital, the Health Officer thought, would immeasurably improve the health of the city. The finance committee of the Common Council supported Doane's proposal, pointing out that the surplus funds accruing from the head tax amounted to over \$100,000 a year, more than enough to build additional hospital facilities. On this occasion, possibly reluctant to surrender control of a lucrative slush fund, the Common Council voted to table the resolution.²³

The year 1845 saw immigration, largely Irish and German, take a sharp upturn, the beginning of a deluge that did not ease until 1855. The Marine Hospital was soon jammed with typhus and other fever patients, and the casual immigrant inspection system was permitting thousands of additional cases to pass into the city and other areas of the state. Bellevue and all other municipal and private institutions soon filled to overflowing. Fear that the disease would spread in epidemic fashion among native-born citizens finally led the state to establish a Board of Commissioners of Emigration in the spring of 1847. This agency, which was designed to remedy the many abuses arising from the massive influx of newcomers, was authorized to build its own hospitals. Since the Marine Hospital represented one of the first screening processes intended to prevent sick immigrants from entering New York City, the State Legislature in December of 1847 voted to transfer jurisdiction over the Hospital from the Health Officer to the Commissioners of Emigration.24

When first taken over by the emigration commissioners, the Marine Hospital consisted of a yellow fever hospital, a smallpox hospital, and one other general hospital. Under the new administration, the accommodations were quickly increased. By 1850 the Hospital consisted of three brick and five frame buildings with accommodations for 520 patients. Dr. F. Campbell Stewart, the resident physician, stated that there had been some administrative difficulties resulting from the transfer of control, but he praised

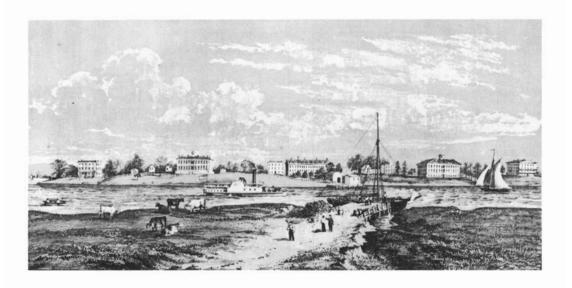
the emigration commissioners for the liberal way in which they had provided financial support for the institution.²⁵

Still, the tide of immigration far exceeded anything in the nation's history, and both the city and state were ill-prepared to meet the tremendous task of providing necessary health care for the immigrant sick during the next few years. The Marine Hospital carried an especially heavy burden in this early period. From May to December of 1847 some 6,474 immigrant sick were admitted to the Hospital—in contrast to the peak of 1,000 or so admissions just a few years earlier and a bed capacity of 520. The figures for the succeeding years were 8,661 in 1848, 6,159 in 1849, 3,411 in 1850, 6,343 in 1851, and 8,887 in 1852. For the next two years the annual number of admissions fell to slightly fewer than 5,000 and then dropped off sharply. With the Hospital desperately overcrowded, the case fatality rate was high. In 1849 it was estimated to have been 15½ per cent and this figure remained fairly constant until 1853.²⁶

During the peak year 1852, when the Marine Hospital treated almost 9,000 patients, the official capacity was listed at 556 beds and the emergency capacity at 776. Yet for many months over 1,000 patients were crammed into the Hospital. Warehouses adjacent to the Hospital, originally used to store quarantined merchandise, were constantly pressed into service as emergency hospitals, but even so the crowding was so bad that it became impossible to classify newly admitted patients. The result was that individuals suffering with rheumatic disorders were often placed next to typhus cases, and the resident physicians often found themselves with a caseload of over 200 patients. The warehouses were completely deficient in ventilation, water, and heat, leading one resident physician to remark "they are but whitened sepulchres for the dry bones of the living. . . . " A state legislative committee appointed in 1852 to investigate hospital conditions under the charge of the Commissioners of Emigration, graphically noted the deplorable overcrowding at the Marine Hospital but felt the fault was directly chargeable to the state's failure to provide sufficient funds.27

By 1855, however, an ebbing in the flood tide of Irish and German immigration, combined with more adequate state appropriations for immigrant welfare, had enabled the Commissioners of

The City Overwhelmed



Ward's Island buildings, New York, 1860. Courtesy of the New-York Historical Society, New York City. Emigration to establish a fairly effective system for dealing with and caring for all new immigrants coming to the New York port. In 1856 the admissions to the Marine Hospital fell below 2,000 and two years later were down to 1,204. During these years a series of difficulties in connection with yellow fever aroused opposition to the Marine Hospital among the residents on Staten Island. As noted in Chapter 14, in 1859 the State Legislature provided for a floating hospital to replace the Marine Hospital.

Ward's Island Hospitals

The story of the grim conditions which led to the establishment by the Commissioners of Emigration of a group of hospitals on Ward's Island properly belongs in the discussion of the immigration problem. In the 1840s, however, several private hospitals were established by bondsmen who had assumed responsibility for immigrant care. These institutions were designed to operate at a cost below what the city charged for maintaining indigent sick, and conditions in them soon became scandalous. It was in part to rectify this and other abuses that the Commissioners of Emigration were appointed in 1847. One of the first acts of the new commissioners was to establish an Emigrant Refuge and Hospital on Ward's Island. Technically the Refuge was an immigrant almshouse, while the Hospital served the sick. The sickness rate among needy immigrants was so high, however, that the distinction between the two institutions was always a fine one. During the latter part of 1847 a total of 1,629 immigrants were treated in these two institutions, the majority of whom were suffering from typhus. This disease soon took a heavy toll among the personnel employed by the commissioners. One of the first to succumb was Robert Taylor, the general agent for the commissioners.

On January 26, 1848, Taylor's post was assumed by Dr. John H. Griscom. An energetic health reformer, Griscom had been a major source of irritation to lethargic and dishonest civic officials and a minor one to his conservative professional colleagues. He was particularly interested in immigrant welfare problems, having served on a special committee appointed by the New York Academy of Medicine in 1847 to investigate typhus fever care for newly arrived immigrants, and later having helped to author a stringent federal statute regulating conditions aboard immigrant

vessels. As general agent, Griscom was chief executive officer for the commissioners with particular responsibility for hospitals and other institutions under their care. During 1848 the facilities on Ward's Island were rapidly expanded and improved, and over 4,000 immigrants were given assistance. Another 8,661 were placed in the Marine Hospital, and several hundred more cared for in various other hospitals. In pleading for more funds, the emigration commissioners pointed out that during 1848 the Marine Hospital had treated 666 cases of smallpox, 25 of yellow fever, 60 to 70 of cholera, and over 3,000 cases of typhus. Owing to the crowded conditions, the disease had spread through the wards, affecting accident and other noncontagious cases. A 250-bed hospital was under construction, the commissioners said, but its completion would do little to alleviate the situation.²⁸

In 1849 the main hospital on Ward's Island was completed and twelve temporary wooden buildings, each of which could accommodate fifty patients, were erected. These small buildings were specifically designed to permit the separation of patients according to their diseases—a principle which Dr. Griscom had long advocated. In addition, the commissioners pushed ahead with a program for improving the ancillary facilities, water, sewerage, laundry, and so forth. As quickly as funds were made available, the commissioners bought land on the Island and added more buildings, until a huge complex was gradually created. For a brief period, 1853-1855, the Ward's Island hospital complex formed the largest hospital center in the world. Despite the frantic pace of building, the number of sick and destitute immigrants was always ahead of the available facilities. Although the Commissioners of Emigration were doing a good job under the circumstances, the Irish press, supported by those who had been engaged in the lucrative business of exploiting newly arrived immigrants, was highly critical. Some of the accusations arose from ignorance or maliciousness, such as the charge that doctors were experimenting with and dissecting human bodies. A legislative committee investigating the charges in 1853 dismissed most of them, and pointed out that the emigration officials were operating against insuperable odds. It noted, however, that hospital accommodations were inadequate, the diet poor, and the sick so crowded that often two patients were placed in the same bed. The temporary wooden buildings

used for hospitals were poorly constructed and represented a distinct fire hazard. To correct these conditions, the committee recommended increasing the funds available to the Commissioners of Emigration.²⁹

One legitimate criticism against the Ward's Island hospitals arose from the system of medical administration. Originally, one man, Dr. John Snowden, served as superintendent of the Refuge and physician-in-chief of the hospitals. Snowden, like Taylor, died while on duty. His job was then divided, and in May of 1849 Dr. Theodore Tellkampf was placed in charge of the hospitals, while Dr. Enoch Greene was made responsible for the Refuge. Tellkampf was largely responsible for reorganizing the hospitals, establishing special wards, improving the general administration, and setting aside a special building for post-mortem examinations. Unfortunately, he quarreled with the emigration commissioners over his insistence upon a permanent resident medical staff. The commissioners, possibly responding to pressure from the medical profession, elected to adopt a system of eight visiting physicians and surgeons, some of whom lived as far as eight miles away from Ward's Island. Tellkampf resigned in 1851, but four years later the commissioners, recognizing the validity of his arguments, substituted a permanent medical staff consisting of a resident physician and a surgeon-in-chief, each with two assistants.30

Typhus took a heavy toll among the medical staff on Ward's Island. The deaths of Taylor and Snowden have already been mentioned. Dr. Griscom, who served for three years, estimated that he had personally examined over 7,000 cases of typhus. He, too, finally came down with the disease and was prostrated for three months. He was forced to resign his position in 1851, and spent several months traveling abroad to recuperate.³¹

The Refuge on Ward's Island was intended for destitute adults and children, but with smallpox, typhus, and other diseases rife among the immigrants, it was almost impossible to prevent them from gaining a foothold. In 1852 some 15,182 immigrants were admitted to Ward's Island. Of these, 10,966 were treated in the hospitals, while the others were admitted to the Refuge. So much sickness was present in the Refuge, however, that the commissioners described it as "one vast hospital."

By 1855 the pace of immigration had slowed and the worst

crisis was over. By this time, too, an effective system for providing medical care had been established. A number of brick buildings were completed, enabling the administration to abandon some of the old poorly built wooden structures. In July the resident physician system was reinstated. With the new hospital buildings, it was possible to examine all incoming patients and assign them to the proper wards. Another improvement was the employment of German physicians to treat their fellow countrymen. As might be expected, the case fatality rate dropped commensurately with better medical facilities. By 1856 it had fallen to 6.3 per cent, and four years later it was down to 4.9 per cent.³³

In 1862 the emigration officials were able to report the construction of a new brick drainage system, the replacement of nearly all of the original wooden buildings by brick structures, and the completion of a new building for the insane. The total of 3,247 patients treated on Ward's Island during 1862 reflected the decline in immigration during the war years. Rather ironically, as the number of immigrants needing help declined, the facilities on Ward's Island were steadily improving. In 1864 still another new hospital was planned for Ward's Island. Its designers were said to have incorporated all "the great improvements in practical sanitary science," including fresh air, exposure to light, liberal supplies of water, and the means for "preventing the spreading of infection," which had contributed to the cure of disease "beyond the most sanguine medical calculations."³⁴

The Insane Hospitals

The history of the care of the insane is a depressing one. While the advent of more humane treatment in the late eighteenth and early nineteenth centuries alleviated conditions in a few private institutions, the majority of mental patients continued to receive minimal custodial care. The Bloomingdale division of the New York Hospital, largely the product of the Quaker philanthropist, Thomas Eddy, was one bright spot in this tragic story. From 1821 to 1826, when Bellevue opened, indigent lunatics considered curable were sent to Bloomingdale as county charges, while the incurables remained in the Almshouse. Because Bloomingdale was a private institution and could restrict the number of patients, it con-

tinued to practice moral treatment, that is, good diet, pleasant surroundings, and kindness. William Dunlap rode out to visit the institution in the summer of 1834 and found the patients relaxing out in the open, enjoying the fresh air. Violent patients were kept in a separate building, far enough removed so that they could not disturb the others. "Everything about this excellent institution," he wrote, "is beautiful & in perfect order." ³⁵

Fourteen years later Dr. Pliny Earle gave an even more felicitous account of the institution in the New-York Journal of Medicine and the Collateral Sciences. The main building, located on 117th Street overlooking the Hudson River, was a three-story structure containing ample bathing facilities, water closets, central heat, and all other conveniences. Moral treatment was gentle, philosophical, and practical, with the emphasis placed upon making the patient as comfortable as possible. Ample religious, recreational, and educational facilities were available. Of the 140 patients, approximately 85 attended religious services, and 20 to 30 participated in the school. Restraints were kept to a minimum, and the patients were encouraged to attend the parties, dances, and music programs, and to participate in indoor and outdoor games.³⁶

As soon as the new hospital at Bellevue opened in 1826, the insane poor from Bloomingdale and the Almshouse were immediately transferred there. Although it contained only 24 rooms and 32 cells for the insane, 107 patients were admitted. The noise from the insane constantly troubled the other patients at Bellevue, and this fact, along with the obviously overcrowded conditions, led to demands for a separate lunatic asylum. In 1828 the city purchased Blackwell's Island as a site for a penitentiary, leading some of the newspapers to suggest the Island as a location for an asylum. In 1831 the Common Council's Almshouse committee recommended sending 25 lunatics to Bloomingdale to relieve some of the pressure. As a long-range program, it recommended erecting a separate asylum or else increasing the facilities at Bellevue. The matter was debated for some years, while the situation steadily grew worse. By 1835, when construction of a separate asylum on Blackwell's Island finally got under way, a joint committee of the Common Council reported that an average of 150 patients were jammed into Bellevue and another 20 to 25 placed in Bloomingdale. It commented with justifiable pride that the institution presently under construction would be the first municipal insane asylum in the country.³⁷

On June 12, 1839, Blackwell's Island Lunatic Asylum opened with accommodations for 164 patients. One wing, appropriately called the Mad House, was designed to house violent patients. Immediately 196 patients were admitted to the Asylum. By November of 1840 the number of patients reached 278 and the Common Council voted to enlarge the facilities. An addition increased the accommodations to 212, but in October of 1842 Dr. Alexander B. Whiting, the Resident Physician, reported that the institution was caring for 335 patients, many of them, he wrote, stowed in halls and passageways. The excessive crowding, he said, created "one common Pandemonium" and made typhus an omnipresent threat. All types of patients were jammed together, which made treatment and recovery virtually impossible. In addition to more beds, he also asked that proper attendants be employed to replace the "criminals and vagrants," 38

No attention was paid to this and other complaints for several years. In 1847, at a time when the Almshouse hospitals had come under the energetic administration of Dr. Reese, a Common Council committee found 420 insane patients on Blackwell's Island, of whom 140 were in the Mad House and another 280 in the Asylum. The committee reported that the Mad House had been designed to accommodate 66 patients and the Asylum to handle 99, and that the best possible utilization of space would make it possible to care for a maximum of only 250 patients. Under these circumstances, it was imperative that a new Mad House be erected and the Asylum enlarged.³⁹ After some debate the Common Council agreed, and the additional construction was started in 1848.

By 1851 the institution had been enlarged to take care of 450 patients, but the available facilities were never able to accommodate the demand. Although Dr. Reese was able to eliminate prison help from Bellevue Hospital, he was not permitted to hire nurses and attendants at the Asylum. Since the mentally ill were least able to protest brutal treatment, the use of prisoners was particularly undesirable. By 1853 the number of patients had climbed to 580, and the Resident Physician was again appealing for more accommodations, but seven years elapsed before any relief was pro-

vided. When the Commissioners of Public Charities and Correction assumed responsibility in 1860, they found that the daily patient load averaged around 745, despite the fact that the institution was designed to hold only 450. They promptly renovated the Asylum and added a new wing. A large general hospital was under construction on Blackwell's Island in 1860 to replace several of the smaller ones which had been used for some years. At the completion of the general hospital, the commissioners renovated one of the older buildings and used it as a receiving institution for the insane. Temporarily, the pressure was relieved.

The history of the treatment of the insane in New York City follows the pattern generally characteristic of the United States and Europe. As moral treatment gained support, governmental institutions were established to provide good medical care for the indigent insane, but in every case the flood of applicants so overwhelmed these institutions that proper care was almost out of the question. New York City was well ahead of its time in establishing a municipal asylum, but this institution was no more successful than the great state asylums which came into being in the midnineteenth century. In New York, as elsewhere, custodial care rather than treatment was to remain the order of the day for at least another one hundred years.

The Blind, Deaf, and Dumb

The New York Eye Infirmary, established in 1820, continued to flourish in the succeeding years. By 1825 it was receiving a state appropriation of \$1,000 annually and was getting strong support within New York City. In that year, it treated 810 patients, curing 660, relieving 25, and discharging 11 as incurable. Some of these patients were probably suffering from ear problems, since the Infirmary's report for 1828 shows 925 eye and 91 ear patients. Judging from the legislative appropriations, the institution changed its name to the New York Eye and Ear Infirmary shortly before 1845. Although voting money to the Eye and Ear Infirmary, the Legislature did not officially change the Infirmary's name until 1864. As the number of patients increased, the Common Council began giving annual grants, contributing \$200 in 1848 and \$250 in 1851. A state legislative commission appointed to examine the Infirmary in 1853 asserted that it "well deserves the fostering care

of the State." It found that the institution was receiving annually \$1,000 from the state, and another \$250 from the city. The four attending, and two consulting, physicians were providing gratuitous service to over 3,000 patients. After noting that many patients came from all parts of the state and that many others were recent immigrants, the commission recommended a capital appropriation of \$15,000 for building purposes and an annual appropriation of \$2,000. With firm backing from the city and state, the institution steadily expanded its services until by 1866 it was treating over 6,000 patients per year. Like the dispensaries, the Infirmary attracted able physicians, men who were drawn to it by the opportunities for clinical work. Thus it served a dual function as a teaching and charitable institution.

In 1837 the New York Ophthalmic Dispensary was formally chartered, but it did not survive long. A more significant institution was the New York Institution for the Blind, incorporated in 1831. A school for the blind rather than a hospital, this Institution served the entire state. From 1832 to 1834 the city sent it thirteen children from Bellevue. Recognizing the need for such a school, a Common Council committee recommended paying \$130 a year for each child sent from the Almshouse to the Institution. In the ensuing years the State Legislature voted both capital and operating funds for the Institution. An appropriation of \$12,000 was voted for building purposes in 1836 and another \$15,000 in 1839. In 1845 an annual appropriation of \$5,000 was granted. The New York Institution for the Blind remained the sole school of its type in the state until 1865 when the New York State Institution for the Blind was incorporated. 12

The second successful eye institution was the New York Ophthalmic Hospital opened by Drs. David L. Rogers and Mark B. Stephenson at 6 Stuyvesant Street in May of 1852. During its first year of operation almost 1,300 patients were admitted. Like the dispensaries, the Ophthalmic Hospital provided medical care for the poor and clinical experience for the physicians. It remained exclusively an eye institution until 1869 when it was authorized to treat car disorders.⁴³

In 1827 the Asylum for the Deaf and Dumb was incorporated. The original funds came from a state grant of \$10,000 made contingent upon the directors raising a similar amount. In the succeed-

ing years the state gave a substantial annual appropriation in return for which the institution agreed to accept a certain number of pupils from each senatorial district. In 1834 the state raised the annual grant to \$5,000. By 1854 the student body numbered 279, of whom 203 were supported by the state.⁴⁴

Private Hospitals

In February of 1855 the promoters and friends of a hospital for women held a meeting to organize what was to become the Women's Hospital of New York. The leading spirit was Dr. J. Marion Sims, who had recently come to New York to demonstrate his new operation for vesico-vaginal fistula. He was joined in the enterprise by Drs. Valentine Mott, Alexander H. Stevens, John W. Francis, and Edward Delafield. As its name implied, the institution was designed to provide special care for women's disorders. In June of 1855 the new institution began a long and successful career. An appeal to the Legislature led in 1857 to a charter and an appropriation for the State Women's Hospital. Under the terms of the legislative grant, at least one bed was to be reserved for charity patients from each county in the state. A year later the city gave a block of ground bounded by Fourth and Lexington Avenues and 40th and 50th Streets, for a building site. While plans for the new building were moving forward, the Hospital continued to function in temporary quarters. At the third annual meeting held in January of 1858, it was reported that 75 patients had been admitted and 62 discharged. The financial report showed a state donation of \$10,000 and over \$6,000 from other sources. Possibly delayed by the war, it was not until May of 1866 that construction was started on the permanent hospital, and 1867 before the first patients were admitted to the new building.45

Shortly before the establishment of the Women's Hospital, Drs. Mott and Halliday had investigated the practice of "baby farming" and discovered that few infants farmed out to wet nurses managed to survive, while the infant mortality in the Almshouse was over 90 per cent. A group of public-spirited citizens first decided to establish a place where children could be wet nursed, but soon realized the need for a children's hospital; hence the name, Nursery and Child's Hospital. The founders organized on March 1, secured a small building from the New York Hospital, and began

operations on May 1, 1854. Wide publicity in the newspapers brought in enough contributions to construct a new building in 1857.⁴⁶

In 1857 still a third institution for women and children was organized, although its founders were as much concerned with establishing a medical training institute for females as they were in creating a hospital. The leading spirits were Drs. Elizabeth and Emily Blackwell and Mary E. Zakrzewska. Almost as soon as the third institution, the New York Infirmary for Women and Children, was organized, these three women physicians began instructing small classes of female students. A few years later their work led to the founding of the Women's Medical College of New York.⁴⁷

In 1858 the Common Council voted to support the establishment of an Infants' Home for the care of illegitimate children. The institution was to be restricted to infants whose mothers were of good character. On December 28, 1859, the cornerstone for the new institution was laid on 51st Street, adjacent to the Nursery and Child's Hospital. Apparently this institution was incorporated as the New York Infant Asylum on March 11, 1865. The following year it was absorbed by the Nursery and Child's Hospital. A state appropriation of \$10,000 was transferred to the latter hospital, provided a comparable amount was raised by private subscription. About this time the Foundling Hospital was organized by the Sisters of Charity. In addition to the evils of baby-farming, the high rate of infanticide was another factor in arousing an interest in infant welfare during these years.⁴⁸

One of the earliest institutions for private patients was St. Vincent's Hospital, which opened under the auspices of the Sisters of Charity in the fall of 1849. An announcement on November 15 stated that the Hospital would accept private patients in the general ward at the rate of \$3.00 per week. It added that the Hospital intended to admit the sick poor, but that it had no funds for this purpose. The first building was a three-story house on 13th Street between Third Avenue and the Bowery. In April of 1856 the Hospital moved to a former orphan asylum on 11th Street near Greenwich and Seventh Avenue. The renovated asylum was large enough for the Hospital to maintain 112 beds and to care for over 600 patients a year. 49

The next private hospital to come into operation was the Jews' Hospital, later renamed Mount Sinai. In the summer of 1852 Jewish New Yorkers were asked to contribute to the establishment of a hospital. The response was enthusiastic, and on June 5, 1855, a new hospital building on 28th Street between Seventh and Eighth Avenues was officially opened. The Hospital, designed to accommodate between 100 and 150 patients, incorporated what were then the most modern conveniences—hot air furnaces, running water, and water closets. Dr. Mark Blumenthal was appointed Resident Physician, and the staff included such prominent medical figures as Valentine Mott, Willard Parker, and C. R. Gilman. On April 17, 1866, the name of the institution was officially changed to Mount Sinai Hospital.⁵⁰

The same year that Mount Sinai opened, the State Legislature chartered the Consumption Hospital. Although the president of the trustees was Dr. John H. Griscom and the founders included many prominent New Yorkers, the attempt proved abortive. In 1856 a second denominational hospital was founded, St. Luke's. Five years later the first nationality group to move into the medical scene established the German Hospital. This institution began as a dispensary in 1857 and received a hospital charter on April 13, 1861. It was not until five years later, however, that the cornerstone was laid on 77th Street between Lexington and Fourth Avenues, and three more years elapsed before the Hospital officially opened on September 13, 1869. One other hospital was chartered in these years, Roosevelt Hospital, which came into being under the terms of the will of James Roosevelt. It was officially chartered on February 2, 1864, and opened several years later.⁵¹

In glancing back over the development of dispensaries and hospitals in New York City, it is clear that progress was slow during the first half of the nineteenth century. During most of this period only the New York Hospital and its Bloomingdale division provided care for private patients, while the Marine Hospital, Bellevue, and the associated Almshouse hospitals housed the sick poor. The rapid expansion of hospital and dispensary facilities began in 1847 with the establishment of the Commissioners of Emigration. Under their leadership new hospitals sprang into being and Bellevue and the Marine Hospital were enlarged. In these same years several private hospitals and dispensaries were chartered. While

the impact of the Irish and German migrations contributed to the rise of hospitals, these institutions were also the product of urbanization and the increase in medical knowledge. Anesthesia gave an impetus to surgery at a time when hospitals were becoming more than custodial institutions. Urban slums and tenements were making it imperative that the poor be treated in places other than their homes, and the middle and upper classes were gradually awakening to their social responsibilities. Probably the most distinctive new development was the conception of hospitals as a place to treat private patients. This step, which was only beginning in the mid-nineteenth century, drastically altered the popular image of the hospital; from a place where the poor went to die, it was to become an institution where the sick were sent to be cured.

The Dispensaries

In terms of large-scale medical care, the most effective charitable organizations in New York were the dispensaries. As of 1825, the New York Dispensary, founded thirty years earlier, still served the entire city. By the time the Metropolitan Health Bill was passed in 1866, a total of ten dispensaries were treating over 150,000 patients. As noted in the earlier history of the New York Dispensary, these institutions provided complete out-patient care and employed district physicians who treated hundreds of additional sick in their homes. The dispensaries were established and operated by private groups, but received assistance from both the city and the state. The customary procedure followed by the trustees was to apply for governmental assistance immediately upon getting the dispensary operational.

With a rapidly increasing clientele, the New York Dispensary found that it had outgrown its facilities in 1827 and appealed to the Common Council for assistance. The Council granted the trustees a corner lot located at the intersection of White and Centre Streets, on which a new three-story building opened in January of 1830. In its first year of operation in the enlarged facilities, admissions totaled 14,774, almost double the number cared for five years earlier.⁵²

New York was spreading northward at this time, and proposals for the establishment of a second dispensary were soon forthcoming. On November 28, 1828, a small group of private citizens obtained a charter for the Northern Dispensary. Whether or not the Dispensary established temporary headquarters and began immediately to provide medical care is not clear. It seems unlikely, however, for it was not until three years later that the Common Council first voted the sum of \$200 to provide a vaccine department for the Dispensary, and it was the fall of 1831 before the Northern Dispensary officially opened. Well over a hundred years have elapsed, and this Dispensary, having served several generations of New Yorkers, still operates in its original building.

Stimulated by the appearance of the Northern Dispensary, a third organization, known as the Eastern Dispensary, came into existence in April of 1832. Following the usual practice, three categories of membership were open to the public: a \$3.00 yearly membership, \$5.00 yearly membership, or a life membership for \$50. Since the dispensaries were charitable organizations, members did not receive medical care, but they were allowed to suggest the names of deserving poor. Officially the Eastern Dispensary did not open until June 15, 1834, but its physician members provided medical care to the poor during the Asiatic cholera outbreak of 1832.⁵⁴

Since medical services were provided for a nominal sum, the dispensaries were able to operate with minimal funds. In the 1830s the dispensary physicians received only \$50 a year. One doctor complained: "The very scavenger of our streets receives for his monthly labors about as much as the dispensary physician, for his yearly services." Fortunately for the poor, if not for the doctors, there was usually no dearth of applicants for the post of dispensary physician. With almost no clinical training provided by the medical schools and little in the way of hospital facilities, the dispensaries offered an excellent chance to gain clinical experience. A dispensary trustee explained in 1837 that his institution served a twofold purpose: it afforded gratuitous medical care for the indigent, and served as "a school where the young Physician acquires practice, confidence and skill." ³⁵⁵

Thanks to the medical profession, during 1836 the three dispensaries treated a total of 26,744 patients at a cost of \$5,154.79, or slightly less than twenty cents per patient. Prior to 1840 the city had contributed amounts ranging from \$200 to \$600 annually to the three dispensaries. These funds were especially allocated for

the care of smallpox patients and for the support of a vaccination program. Moreover, each year the trustees had to make a separate application, with no assurance of success. In 1840 the Common Council instituted a policy of permanent support. In return for an annual grant of \$1,200 to the New York Dispensary and \$1,000 each to the Northern and Eastern Dispensaries, the three institutions were required to submit an annual report of the number of patients treated and/or vaccinated. These grants were supplemented in 1841 when the State Legislature voted to give \$1,500 annually to each of the dispensaries. On their part, the dispensaries were obligated to keep a supply of genuine vaccine matter on hand and make it available gratuitously to all physicians in the state. 56

The initiative to establish the next two dispensaries came from the Association for Improving the Condition of the Poor (A.I.C.P.). Aided by a donation of \$5,000 given in the name of Catherine and Elizabeth Demilt, the A.I.C.P. organized the residents in the northeastern section of the city and opened the Demilt Dispensary in April of 1851. The A.I.C.P. stressed in its annual report that still another dispensary was needed in the northwestern area. In appealing for funds, the Association noted that it had been subject to criticism from some donors because so much of its aid was given to foreigners and Roman Catholics. Emphasizing that its purpose was to aid the indigent in the spirit of brotherhood, the Association gave short shrift to this objection. The initiative provided by the Association led to the chartering of the Northwestern Dispensary in 1852. With unusual dispatch, an outpatient building was made ready, and the Northwestern Dispensary officially opened in January of 1853. In its report for 1852, the A.I.C.P. took justifiable pride in pointing out that it had made a significant contribution to the medical care of the indigent through the establishment of the two new medical centers.57

In accordance with its customary practice, the Common Council voted a \$1,000 annual appropriation to the Demilt Dispensary in 1852 and made a similar grant to the Northwestern Dispensary in 1854. The latter institution was particularly happy to receive this support. The board of trustees stated that the Dispensary had provided medical aid to almost 5,000 patients during 1853, but had received only \$250 from the city, the rest of the money coming

from private donations. Meanwhile, the New York Academy of Medicine, through its committee on public health and legal medicine, undertook a study of the dispensary system and the administration of medical aid to the poor. Dr. Griscom, the chairman, reported for the committee that the city was woefully short of dispensaries and that the whole system of medical care for the poor needed revision. The blame, he said, rested upon both the public and the medical profession, Physicians had little interest in the dispensaries, first, because their administration was largely in the hands of laymen, and second, because of the nominal remuneration for their services. Griscom deplored the fact that few dispensary physicians resided in their districts and that the position of dispensary physician was considered merely a stepping stone to private practice. Since the average annual salary of the dispensary physicians was only \$242.84, he felt that they could scarcely be blamed for taking a casual attitude toward their work. He pointed out that the dispensary physicians were paid an average of only 14 cents per patient, and he asked sarcastically if the dispensaries could be considered "a public charity" when the medical profession was bearing most of the cost.58

From the standpoint of the poor, he continued, the existing organization was totally inadequate. Although the city's population had jumped from 150,000 to 500,000, no new dispensaries had been established. The result was that the poor often had to travel great distances to one of three dispensaries, a circumstance particularly hard upon women and children. In concluding his report, Dr. Griscom urged that the dispensary physicians be made full-time employees and that they be given the authority and responsibility of sanitary police. In this role, their primary concern would be with preventive medicine, that is, in removing the causes of disease. ⁵⁰

Although Dr. Griscom's recommendations for a complete reorganization of the dispensary system were disregarded, he helped to awaken the public to the need for better medical care for the sick poor. By 1854 five dispensaries were in operation, providing medical assistance to thousands of residents. The New York Dispensary, with a medical staff of over twenty, treated 46,338 patients in 1854, almost as many as the other four dispensaries combined. All told, 82,396 patients attended the dispensaries, while another 20,588 were treated at their homes. In addition, 207,349 prescriptions were dispensed and another 10,278 individuals vaccinated. The entire cost of this service was estimated at \$30,000. The following year the total number of patients rose to 109,670, although the operating costs of the dispensaries seems to have been lower. The average cost per patient varied from 12.2 cents at the New York Dispensary to 28.4 at the Northern, giving an average for all five dispensaries of 17.9 cents per patient.60

As homeopathic physicians increased in numbers during the mid-century, they encountered bitter opposition from the allopaths, or regular physicians. Out of necessity, the homeopaths had to establish their own hospitals and other medical institutions. The first homeopathic dispensary opened in February of 1848. Indicating the relative scarcity of homeopathic practitioners in New York City, the notice stated that it would remain open for one hour a day. The Homeopathic Dispensary, as it was called, grew slowly, but within ten years its staff included ten attending physicians and twelve consulting physicians. By 1861 two additional homeopathic dispensaries had been opened, the Northern Homeopathic and the Central Homeopathic. Since the public did not share the orthodox practitioners' suspicion of homeopathy, public funds were made available to homeopathic institutions. By 1862 the Homeopathic Dispensary was listed among the institutions receiving a yearly grant of \$1,000 from the Common Council. The following year it was included in the list of New York and Brooklyn dispensaries which were to share a state appropriation of \$10,000. The money was to be divided among them on the basis of the number of patients treated. A year later, 1864, all three homeopathic dispensaries received state aid.61

The only immigrant group to establish a dispensary were the Germans, who opened the German Dispensary in January of 1857. The last institution to appear in these years was the Northeastern Dispensary, which seems to have been organized in 1863. With these two dispensaries in operation, by 1866 New York had ten major dispensaries providing both out-patient and home care for the destitute sick. Aside from the immediate benefit to the poor, the dispensaries were providing invaluable clinical training for the city medical profession. This medical experience was only part of what the physicians gained from their dispensary work. It brought

them into close contact with the squalid slums and the stifling environment in which so many New Yorkers lived. For those with any feeling for humanity, working in the dispensaries was a shocking experience and it was no accident that the physicians who led the vanguard for social reform all had engaged in dispensary practice.

Notes to Chapter 22

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- 3. Daily Times, November 6, 1851, March 22, 1852.
- 4. Valentine's Manual, 1852, 296-97.
- 5. Docs. of Bd. of Aldermen & Assts., II, 407-08.
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- 19. Ibid., 155-58, 215-24.
- 20. Times, April 27, November 16, 1862.
- 21. N.Y. State Laws, 54th sess., chap. 234, April 22, 1831, pp. 273-76; 55th sess., chap. 163, April 17, 1832, p. 265; 59th sess., chap. 25, February 13, 1836, p. 29; 60th sess., chap. 165, April 6, 1837, p. 150.

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- 25. Valentine's Manual, 1845-46, 275; N.Y. State Assembly Document Number 154 (Albany, 1850).
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- 60. A.I.C.P., Eleventh Annual Report, 1854, 29; N.-Y. Int. of Med. & Coll. Sci., XV (1855), 302-03; Valentine's Manual, 1857, 301.

The City Overwhelmed

61. Daily Tribune, February 15, 1848; Valentine's Manual, 1858, 323; 1860, 373; Trow's New York City Directory, 1861, 17-18; Docs. of Bd. of Aldermen, no. 14, XXIX, 14; N.Y. State Laws, 86th sess., chap. 210, April 23, 1863, p. 365; 87th sess., chap. 401, April 25, 1864, pp. 909-10.

23

Immigrants, Tenements, and General Mortality

New York, like all American port cities, was profoundly affected by the growing stream of immigrants. From 1825 to the mid-1850s, with a few minor fluctuations, the trend of immigration was steadily upward. Immigrants who arrived with some resources were in a position to move west, but the remainder were compelled to settle in the crowded city and seek employment where they could. Prior to 1847, the date when the immigration commission was established, no precise records were kept of the yearly inflow, and the estimates vary widely. For example, William J. Bromwell in his 1856 History of Immigration to the United States places the number of immigrants coming to New York in 1830 at 13,748. Mayor Aaron Clark declared that 30,224 had entered during that year, while Friedrich Kapp, writing in 1869, placed the figure at 23,322.1 Kapp, whose study seems to be the most accurate, estimated that about 4,000 immigrants annually entered New York City between 1819 and 1824, and that the yearly figure rose to over 12,000 from 1825 to 1820.2

The Passenger Act of 1824 required shipowners to post bond for each passenger as a guarantee against his becoming a charge of the city. The measure worked quite well for a few years, since the annual immigration was not large and the municipal government was relatively honest. By the 1830s, as the flow increased, unscrupulous immigrant brokers began offering for a nominal sum to relieve owners of this responsibility. Theoretically, these brokers were expected to pay for the support of any immigrants who became public charges, but in actual practice the brokers rarely had to pay. Shipowners, who did not wish to become involved with bonding, could relieve themselves of the responsibility by paying the city a flat amount per passenger as a commu-

tation fee. Unfortunately, as corruption gradually permeated the municipal government, a good part of this money never reached the city coffers. No exact records were kept of the commutation money from 1824 to 1842, and for the latter part of this period, no records of any sort were made.³

As has been mentioned, immigrants often arrived from the grueling sea journey half-starved and half-sick. Immediately upon arrival they were set upon by rogues, thieves, and confidence men, who frequently managed to relieve them of their few remaining possessions. Under these conditions, it is not surprising that immigrants constituted a major portion of the sick and destitute, nor that they contributed heavily toward the city's high mortality rate. In 1843 City Inspector William A. Walters estimated that although the foreign-born constituted only about 20 to 30 per cent of the population, they accounted for more than 50 per cent of the adult deaths.

A committee of the Board of Aldermen looking into the immigrant situation was able to document page after page of outrageous frauds perpetrated against both the immigrants and the city.4 The former were mistreated on shipboard, robbed and abused upon landing, and, when they were unable to support themselves, the city had no records of the money paid for bonding or commutation. The brokers who had assumed responsibility simply bribed municipal clerks to destroy the records, and in cases where bond or commutation fees had been paid directly to municipal clerks, the transactions were never recorded. As a consequence, the immigrants were classed as paupers and jammed into the city's already overcrowded Almshouse. Since the Marine Hospital was supported by the immigrant head tax, in 1843 Health Officer Sidncy Doane suggested that immigrants be allowed to enter the Hospital anytime within a period of two years after their arrival in New York. His suggestion, however, received scant consideration.

In 1842 and 1843 the city did take measures to remedy some of the abuses, but the effect was minimal. As the number of immigrants soared in the 1840s in response to famine in Ireland and political troubles in Germany, the immigrant brokers and runners flourished, and the business of defrauding, exploiting, and robbing immigrants became a large-scale enterprise. A Common Council committee looking into the abuses of immigrant brokers and runners in 1845 declared that it had overlooked "no species of fraud which the ingenuity of avarice could suggest. . . ." "False statements, extortionate price, oppression, menaces, and open plunder," the committee wrote, "have been the means of profit and gain. . . ." The long struggle to prevent the exploitation of immigrants is a story in itself. Losing the last of their possessions to unscrupulous brokers and runners, however, was often the final straw that pushed sick and half-starved immigrants into abject poverty from which many never recovered. Living in poverty, they fell prey to all types of sickness. Aside from increasing the mortality rolls, the immigrants provided a reservoir of infection which posed a constant threat to the city's health.

One of the worst health problems arose from the emergence of the private immigrant hospitals and boarding houses. After 1842 those brokers who were forced to assume responsibility for indigent and sick immigrants set up their own institutions rather than pay the minimum fees charged by the Almshouse. The name of one of the most notorious of these, Tapscott's Poor House and Hospital, located in Williamsburg, Brooklyn, became almost synonymous with misery and degradation. The patients were crammed together under incredibly filthy conditions, the food was putrid, and practically no medical care was available. A Common Council committee investigating immigrant institutions was appalled at what it found and recommended that the city take full responsibility for the care of immigrants.⁷

By 1847 the city was beset by a flood of impoverished, disease-ridden Irish. Every city institution was jammed with patients, and epidemics of typhus, smallpox, and cholera were periodically sweeping through the wards. Aside from considerations of humanity, something had to be done to relieve the city of the heavy burden imposed by these sick and indigent newcomers. After city officials had demonstrated their inability or unwillingness to solve the problem, immigrant aid societies joined with reformers and businessmen to push through a state law creating the Commissioners of Emigration. Under the provisions of the law passed on May 5, 1847, the Governor was authorized to appoint six commissioners, who were to serve with the mayors of New York and Brooklyn and the presidents of the Irish and German societies.

These commissioners were to be responsible for all immigrants until they had lived in New York for five years. Their duties were to inspect incoming vessels, to provide counsel and assistance in securing employment, and to support all immigrants who became public charges during the five-year period. The funds for this program were to be derived from a head tax of one dollar (later increased to \$2.50) collected from the captain of each vessel.8

The work of the commissioners fell into two main categories: the first was to provide for sick and destitute immigrants; and the second was to prevent the exploitation of new arrivals and to see that they had a chance to get a decent start. The first task was almost overwhelming in itself. From May to December of 1847 the commissioners were forced to provide medical care and assistance to almost 11,000 immigrants. They packed the sick into the Marine Hospital, the Smallpox Hospital, and in temporary facilities on Ward's Island. The commissioners had hoped to use Bellevue, but the Board of Health ruled that the crowded conditions in the Hospital would not permit the admission of typhus-ridden immigrant patients.9 The desperate efforts by the commissioners to build adequate facilities on Ward's Island have been recounted in the preceding chapter. Suffice it to say here, by 1852 they were operating the largest hospital system in the country, caring for over 20,000 patients in half a dozen or more specialized institutions.

Besides being deluged with hordes of sick and destitute, the commissioners faced constant attacks from those with vested interests in immigration—brokers, runners, and boarding-house keepers, from corrupt municipal officials who resented their loss of graft and patronage, and from various immigrant aid societies which felt that the commissioners were not doing enough. In March of 1852 the Common Council adopted a series of scurrilous resolutions accusing the commissioners of gross inefficiency, irresponsibility, and corruption. They were described as "ship-owners and others, whose interests are adverse to those of the emigrant, and whose course is controlled by their own private interests, to the sacrifice and disregard of their public duties." The Council then sent a special committee to the State Legislature asking that the position of Commissioners of Emigration be made elective. The commissioners indignantly defended themselves by

pointing out that their membership already included two elective officials and the presidents of the two major immigrant associations. As to the charges of corruption, they declared that their operations were open to anyone who wished to examine them. The commissioners further noted that the Board of Aldermen had made the accusations without making any effort to look into the affairs of the immigration commission.¹⁰

In the meantime, a legislative committee had already started an investigation. While its members found a great many conditions which needed correction, they praised the commissioners for their accomplishments in the face of great odds. The blame for any inadequacies, the committee reported, resulted from a shortage of funds and the pressure under which the Commissioners of Emigration had worked. The Common Council failed in its efforts to replace the commissioners, but the resulting investigations spot-lighted the needs of the immigrants and led to some improvement.¹¹

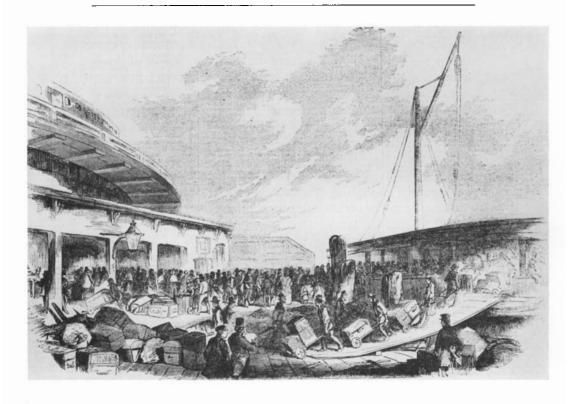
One of the major problems, the deplorable conditions during the long sea voyage, was beyond the scope of the emigration commissioners. Yet the newspapers, diaries, correspondence, and other records of this period are replete with harrowing stories of sickness, suffering, and death endured on the long passage to America. In the fall of 1853 a vessel, which had left Liverpool with 1,016 passengers, arrived in New York with only 816. Within one month after landing an additional 100 died, making a total mortality of about 63 per cent. According to the Daily Times, 44 ships arrived in New York between September 9 and November 22, 1853, with passenger lists showing a total of 16,272 immigrants. Of these, 1,118 had died at sea. Significantly, 1,067 of these deaths occurred on 29 of the vessels.12 The number of deaths on any particular vessel usually bore a direct relationship to the carelessness, negligence, or greed of the shipowners and captains-and when all three were present, the result was often disastrous.

From the start, the Commissioners of Emigration were almost unable to find office space for themselves or housing for their charges. The general fear of typhus and cholera made it nearly impossible for the commissioners to buy or rent facilities within the city. Hospitals, with justification, placed a limit on the number of communicable disease cases they could handle, and the commissioners encountered strong resistance from local residents when they sought to procure facilities for immigrants. The overlapping of the commissioners' responsibilities with those of the Health Officer and Resident Physician led to constant clashes and misunderstandings.¹³ To cap it all, corrupt city councilmen threw every possible obstacle in the way. Complaints made by the most vicious immigrant brokers and runners were given more consideration at City Hall than the answers of honest and conscientious citizens.

One of the primary needs was a central landing place, where the commissioners could systematically weed out sick and needy immigrants, and provide the healthy ones with information and assistance to enable them to get started. This need was all the greater since brokers and runners still congregated around the landing depots to pounce upon newly arrived immigrants. In 1855 the commissioners succeeded in acquiring Castle Garden, a small island off the tip of Manhattan, which was to remain the central immigrant landing depot until superseded by Ellis Island in 1892. The acquisition of Castle Garden combined with the completion of the other immigrant facilities on Ward's Island eliminated many of the abuses connected with newly arrived immigrants. Even Castle Garden, however, did not completely solve the problem. In 1856 a grand jury examining the handling of immigrants reported that scoundrels preving upon immigrants still frequented Castle Garden, and "if they do not rob them of their money, valuables, tickets, baggage-checks, or the like, or commit gross assault and battery . . . will induce them, by force or argument, to go with them to places where they will be required to spend part or all of their money before they can find a chance to escape." The blame for this situation, the grand jury said, rested upon the police, who should break up "this motley, noisy, and dangerous crowd. . . ." The grand jury concluded that the coordination of immigration functions at Castle Garden had drastically reduced the number of pauper immigrants and was "a blessing, not only to the emigrants, but to the community at large. . . . "14 The following year saw the establishment of the Metropolitan Police Force, a step which greatly improved law enforcement and contributed to alleviating the situation at Castle Garden.

By this date, European nations and the federal government had forced shipowners and captains to provide adequate food, water,

Immigrants, Tenements, and General Mortality



Immigrants landing at Castle Garden, New York, 1855. Courtesy of the New-York Historical Society, New York City.

and accommodations for all passengers. Consequently, most of the new arrivals were much healthier, mentally and physically, than their predecessors. For a few years after 1855 the stream of immigration was sharply reduced, and New York was given a brief opportunity to absorb the newcomers. By this time, the mass migration of the mid-nineteenth century had profoundly affected all aspects of New York life. In addition to the obvious political and economic changes, the immigrants added new dimensions to the dirt and crowding which characterized the low-income areas of New York City. Furthermore, the epidemic diseases they brought into the city created apprehension among all classes of citizens, thus helping to promote health consciousness.

The Rise of Slums and Tenements

For much of New York's history it was assumed that housing was best left to the law of supply and demand; a free and unhindered relationship between landlord and tenant, it was thought, was certain to result in mutual satisfaction. By the time it became evident that the social changes brought about by industrialization and urbanism no longer made this thesis tenable, the urban slum had become a basic characteristic of American cities. Prior to this time, however, governmental intervention had occurred in two areasfire prevention and, to a much lesser degree, construction. The occasional collapse of buildings due to faulty construction led to a few tentative regulations by 1867, but the most effective governmental action was in the field of fire prevention, a problem which had preoccupied the City Fathers from earliest times. In the days of frame buildings, open fireplaces, and a totally inadequate water system, major fires periodically ravaged the city, and every minor one was a potential conflagration. Poor construction often contributed to the fire losses. A critic in 1826 observed that in many cases the inner walls neither connected with nor supported the outer walls; thus when fire damaged the outer walls, the entire building was likely to collapse. 15 In the late eighteenth and early nineteenth centuries a number of piecemeal measures had been enacted with respect to fire prevention and construction. In 1832 the Common Council began consideration of a resolution to establish a building code and, more significantly, to appoint a building inspector. The issue was discussed for many years, and finally

in 1849, a fairly stringent building code was formulated for all new construction south of 32nd Street. The law, entitled "An Act for the more effectual prevention of fires in the city of New-York...," required the use of brick, stone, or fireproof materials for all outer walls and for inner walls of buildings over 30 feet in width, and provided specifications for the construction of chimneys.¹⁶

Although the city appointed a superintendent of buildings to supervise construction and repair of public buildings as early as 1839, it was not until 1862 that a building inspector's department with jurisdiction over all buildings in the city was created.¹⁷ By this time the building code had been revised and modified, largely as a result of deaths and injuries from fires in densely populated slum areas. In his first report on February 26, 1863, the Superintendent of Buildings stated that he was engaged in a major drive to see that all tenement houses had fire escapes, and he criticized the practice of permitting feed stores, paint shops, and other dealers in combustible materials to occupy the lower floors of tenement houses.18 The primary aim of the building laws was to prevent the loss of property, a matter of far more importance in the early nineteenth century than human life. The poor brought on their own misfortunes by laziness and immorality, and it scarcely seemed fair that the negligence of the poor should endanger the property of decent respectable citizens.

In 1825 New York City was just beginning to experience a little of the crowding that was soon to characterize much of Manhattan. Foreshadowing the later flight to the suburbs, middle and upper-class New Yorkers were moving out of old houses in lower Manhattan to newer and larger ones in the north. As quickly as they left, immigrants and other newcomers to the city filled the old homes to overflowing. These single-family homes were quickly converted into multi-family dwellings. Where one family had lived, now three or four occupied the building. Since construction never kept pace with the population influx, barns, carriage houses, old breweries, and any buildings which could stand were converted into living space. Those who could not afford these crude accommodations, built squatters' shacks on what was considered unusable land or else moved into cellars and basement apartments. The profitability of renting to the lower economic classes led

builders and investors to utilize every possible bit of land. Gardens and yards disappeared as flimsy rear apartments were thrown up to take advantage of the pressing demand.¹⁹

Uninhibited by health laws, the builders provided little in the way of sanitary facilities. Where a privy and cesspool, or dry midden, had served one family, it now sufficed for three or four—or even more if the garden or yard permitted building of additional housing units. Relatively few houses were connected with the water system, and those which were connected usually had only one hydrant on the first floor. The slum dwellers often found themselves compelled to walk a block or more to the nearest public well or hydrant, and to share completely inadequate toilet facilities with dozens of other tenants. Under these circumstances, personal cleanliness was almost impossible, and the habits of the lowest and most degraded individuals tended to determine the pattern for the entire group.

The real development of the multi-story tenement did not come until after the mid-century. Ironically, it was associated in part with efforts to provide decent apartments for the poor. In 1851 a Quaker philanthropist built what was designed as a model five-story tenement on Cherry Street, and in 1855 the Association for Improving the Condition of the Poor was responsible for the erection of another between Mott and Elizabeth Streets. Within fifteen years both of these places had become focal points of disease, vice, and poverty. As all available land disappeared, the builders and speculators had no alternative but to construct higher buildings, and in the 1850s the multi-story tenement began to replace what were originally single unit dwellings.

The social consequences of crowding were first recognized in the eighteenth century, but by the nineteenth, as the problem became more acute, the rampant individualism of the day looked upon poverty, the cause of crowding, as a matter of choice. If one did not wish to live in filthy, crowded conditions, one simply moved, or else bettered oneself by hard work and thrift. In the same way that many present-day whites blandly assume that the Negro is responsible for his ghetto way of life, so nineteenth-century New Yorkers reacted to the poor. Even those who recognized the correlation between a brutal environment and a lack of morality still assumed that the real solution to poverty lay in improving the

morals of the poor. As Roy Lubove has pointed out in his perceptive study of New York housing, even the A.I.C.P., which supplied the chief leadership in New York's mid-nineteenth-century social and sanitary reform movement, wished to improve the environment primarily to facilitate the moral rehabilitation of the slum dwellers.²⁰

Although some of the early city inspectors indicated an awareness of the relationship between housing and disease, the first New Yorker to make the connection clear was Dr. Benjamin W. Mc-Cready, Dr. McCready, who in 1837 wrote a pioneer study on occupational health, attributed a good part of the ill-health among the laboring class to "the confined and miserable apartments in which they are lodged." He described how buildings designed as breweries or sugar-refineries had been transformed into small apartments and rented to the poor at exorbitant rates. In other cases "the cupidity of landlords has tempted them to build up narrow alleys with small wooden tenements," alleys, he said, which were seldom more than six feet wide. McCready appealed for municipal housing laws, arguing both on grounds of humanitarianism and self-interest. Aside from feelings of "mercy for the poor," he wrote, infectious diseases "do not always confine themselves to the localities in which they originate."21

In 1842 Dr. John H. Griscom occupied the post of City Inspector, an ideal vantage point from which to see the seamy side of New York City. Three years later he published an expanded version of his City Inspector's report for the year 1842. This work, which shows the influence of Edwin Chadwick, the English sanitary reformer, is one of the landmarks in American public health reform. In it, Griscom showed the importance of working and living conditions upon the health of the people, and proposed a comprehensive public health program. In detail, he illustrated the deplorable living conditions of the poor, and placed the blame upon society. Public authorities were negligent in permitting landlords to stow the poor, "like cattle, in pens, and to compel them to swallow poison with every breath." The worst features of the slum homes, he wrote, were cellar dwellings, poor ventilation, general filth, and the crowding of many persons into single rooms. He proposed a "law of domiciliary cleanliness" which would require a sanitary inspection every two or three months and

would place the cost of cleaning slum housing upon the owner or lessee rather than the tenant.²² Three years later in a paper on ventilation, Griscom suggested publishing the names of the owners of the worst tenement buildings in the notorious Five Points section.²³ Although he was ahead of his time, Griscom lived to see many of his ideas put into practice.

The city inspectors who followed Griscom repeatedly called for housing laws. In 1845 City Inspector Cornelius B. Archer advocated closing all basement apartments, many of which were subject to flooding. On visiting some of them, Archer had seen stagnant pools in the rooms of the sick. Describing the slums as hotbeds of disease, he urged public regulation to reduce "this prolific source of misery and death." It was the right and duty of the municipal government, he declared, to regulate buildings in the interest of public health. The tremendous immigration in these years intensified the housing shortage and forced more people into basement dwellings. Even under the best conditions, these cellars were damp and poorly ventilated, but by 1850 the dampness was becoming worse. The introduction of Croton water before an adequate system of sewers or drains was devised probably raised the ground water level and aggravated the problem of flooding. All of the city inspectors decried slums in general, but they singled out these basement apartments as the worst abuse. City Inspector Daniel Delayan in 1862 reported that 18,000 people were living in cellars and basements, and he regretted that he had no authority to do anything about these deplorable living quarters.24

The most effective group in drawing attention to the miserable living conditions of the working class was the Association for Improving the Condition of the Poor. This Association, founded in 1843, included many leading citizens in its ranks. Unlike other New York charitable organizations, which were dedicated to specific problems, the objective of the A.I.C.P. was to remove the general causes of poverty. As has been mentioned, the A.I.C.P. considered moral degradation to be the underlying cause, and it felt that the logical remedy was moral uplift. Its members, however, came in intimate contact with poverty and misery and could scarcely escape the fact that better housing was essential to any improvement in the condition of the poor. In its report for 1847

the Association stressed that "destitution and misery" were due to moral causes and would "admit only of moral remedies," yet it stated that improved housing "lies at the basis of other reforms." The Association drew up plans for a model tenement building this year and was prepared to start construction. The project collapsed, however, when some of the investors withdrew their support. Subsequently the Association formed a separate agency to undertake the task, but it was not until 1855 that the plan was brought to fruition."

In 1853 the Association's committee on the sanitary condition of the laboring class issued a report which appears to have been written by Dr. Griscom, an active member of the A.I.C.P. The report stated that it was now impossible for the industrious working class to secure adequate dwellings near their places of employment in the lower wards, and described the incredibly filthy and crowded conditions in which most of the laboring poor lived. After denouncing basement apartments in particular, and excoriating the exorbitant profits made by tenement speculators, the report appealed for beneficent capitalists to erect decent homes for the poor, promising that properly built tenements offered both a reasonable profit and a chance to serve humanity.²⁶

In 1854 the A.I.C.P. organized the Working Men's Home Association for the purpose of building model tenements, and the following year opened the first one for a group of Negro tenants. It was a six-story brick building in which each unit had four rooms, Croton water, and a water closet. Compared with the existing tenements, it must have been a shining example. Unfortunately, in what must have been a convincing proof of the primacy of moral uplift, when the A.I.C.P. sold it twelve years later, it had become one of the worst slum pockets in the city. In 1856 the A.I.C.P. undertook a systematic analysis of the population in the Eleventh Ward. Of the 53,282 inhabitants, almost one-half were Germans and one-quarter were Irish. The total number of residential buildings was 2,218, with an average of 5.6 families and 23.85 persons per dwelling. The following year the Association made a special investigation of housing and sewerage, and on the basis of its findings unsuccessfully petitioned the State Legislature to take action. In 1859 another study by the A.I.C.P. demonstrated on a ward-by-ward basis the close correlation between

morbidity and mortality and the degree of crowding and filth to be found in any given neighborhood.²⁷

While the A.I.C.P. was endeavoring to awaken the city's conscience, other groups and individuals were also showing a social awareness. Just before the cholera outbreak of 1849, the Board of Health asked for and received a ruling from the city attorney stating that the Board had the power to clean filthy tenements and to charge the cost to the owners or occupants. Two or three months later the Daily Tribune described some of the worst tenements. It mentioned of persons living in one basement, and cited a tenement in the rear of 10 and 12 Mulberry Street in which "there are 800 persons crowded upon two lots, six persons living in almost every room." In March of 1850 Dr. James Stewart requested the police chief to make a census of cellar dwellers in New York. A total of 18,456 people were found to be in this category. Drawing what must have been a fine line, the census classified 5,423 of these people as "dirty." Correlating the census figures with the morbidity rate among these basement dwellers, Dr. Stewart found that the rate for the latter was 12 to 15 per cent higher than for the rest of the population. Stewart's analysis of the census returns was read before the Academy of Medicine and given widespread publicity in the newspapers and medical journals. Throughout the 1850s and 1860s the newspapers denounced housing conditions and demanded reform. The editor of the Daily Times made a tour of the city in the summer of 1852 and bitterly described what he had seen: "You pass by six-storied houses, in which sixty or seventy families harbor, and swelter in the boundless contiguity of life, and ardor, and filth. . . . " He entered houses "alive with nauseating filth, and crawling vermin" and witnessed disease, pallor, and languor on every face. "You inwardly curse the owners of the soil on which the houses stand," he concluded, "for the harbors they erect, and the multitudes they crowd into them, regardless of anything but the heaped-up rent-in-advance."28

Along with the first efforts to improve slum housing, the 1840s also saw the beginning of the movement for ventilation and fresh air. The perennial Dr. Griscom was one of the pioneers in New York City, and Horace Greeley, who could usually be counted on to support liberal or progressive causes, added a fresh air campaign

to his crusade for better housing for the poor. He published a letter by Dr. Joseph E. Buchanan in May of 1853 which argued that consumption was closely related to architecture, and which stressed the need for light, ventilation, and dryness in all buildings. In the succeeding years the *Daily Tribune* carried editorials and articles pounding away at the need for housing reform. As might be expected, Dr. Elisha Harris was also a staunch advocate of fresh air and ventilation. In 1858 he published with a brief commentary a survey of housing in America made by a well-known English health commissioner, David Boswell Reid. Earlier, Harris, as resident hospital physician at the Quarantine Station, had insisted on ample light and ventilation in all hospital wards. One of his first actions as resident physician had been to close one hospital because he felt that the ventilation was too poor.²⁹

The increasing number of outraged protests emanating from New York City finally forced the State Legislature to appoint an investigating committee. The committee began its work in March of 1856 and made a thorough study of tenement housing. The facts it uncovered were familiar to most conscientious New York physicians and reformers, but they came as a shock to the legislative committee. It is scarcely necessary to reiterate the descriptions of the grim scenes of filth, crowding, and utter degradation encountered by the legislators. The appalled committee members strongly denounced the frightful conditions they had found and urgently appealed for the establishment of a "Board of Home Commissioners" to regulate housing in New York City. The Legislature not only dismissed the recommendations, but failed to renew the committee's appropriation.

So deeply affected were the committee members by the incredible scenes they had witnessed that some of them continued their investigations at their own expense. In 1859 the committee report was published. A. J. H. Duganne, who served as chairman in 1857, listed the major abuses in tenement housing: overcrowding, darkness, lack of ventilation, poor construction, inadequate water and drainage, and narrow halls and staircases which made the buildings veritable firetraps. Neither the Legislature nor the Common Council, however, felt that the sanctity of property rights should be violated merely to save the dissolute and intemperate

poor, and benevolent capitalists preferred the 15 to 20 per cent profit from slum housing to the 5 or 8 per cent to be made in constructing model tenements. In the 1850s economic progress and private enterprise were virtually synonymous, and many responsible citizens were convinced that governmental interference with property rights might well bring the entire social system crashing down. It was not until the Draft Riot of 1863 demonstrated that the government's failure to take action might well bring on this same result that public opinion began to change.

In 1850 the newly formed New York Sanitary Association undertook its own investigation, which was published under the title, Domiciliary Accommodations in the City of New York. The report showed the rapid growth of multi-family tenements. Three of the city's wards consisted largely of stores and businesses. The other 19 wards were occupied by 112,833 families. Only 12,717 families occupied single homes, 7,148 were in two-family dwellings, and 4,600 families lived in three-unit houses. The remaining families, 76,620, lived in 13,623 buildings, averaging between five and six families to a house. Thus three-fourths of New York's population were housed in multi-family units, ranging from three to six stories high. The alleyways between the tenements were usually excavated to a depth of nine feet and covered with an arch, converting them into open drains. The water closets were ranged on one side of the alley, and the drain underneath it was connected with the street sewer. The report gave the usual horrible descriptions of dampness, darkness, fetid air, and incredible filtb.31

By the early 1860s demands for housing reform were reaching a new peak. The A.I.C.P., the Sanitary Association, newspapers, medical journals, and even the City Inspector's Department made common cause on this issue. City Inspector Delavan declared in 1861: "The excuse that bargains made between landlords and tenants are matters of private arrangement . . . and the equally implausible excuse that lodgers are frequently too poor to engage better accommodations than those afforded in these wretched hiding-places, are both at variance with the first laws of public morals." His successor, F. I. A. Boole, scarcely one on the side of the gods, reported in 1864 that two tenements, each measuring 18 by

180 feet and five stories high, housed 900 people, 440 adults and 460 children.³²

The final blast which led to reform was the publication in 1865 of the Report of the Council of Hygiene and Public Health. This classic study, which will be discussed later in connection with the Metropolitan Health Act, uncovered nothing new but it climaxed a campaign which had been waged for fifteen years. Its results were widely published in newspapers and journals, and undoubtedly helped to tip the scales. Showing the trend toward larger and more crowded tenements, this building by building survey of the city showed that 495,592 tenement dwellers were housed in 15,309 buildings, an average of seven and one-sixth families to a building. These figures did not include the thousands living in attics, stables, lofts, and shanties. In the Fourth Ward the population density had reached 290,000 to the square mile. Significantly, the study showed that even the middle class was gradually succumbing to the lack of space and to all the other evils which accompanied it. Recognizing that the complexity of urban living required an entirely new approach, the Council called for strict public regulation of tenements and proposed the establishment of a department of social statistics and dwelling improvement, which could apply the new social and scientific techniques to devising solutions for urban problems. In light of how little has been done in the twentieth century, the Council of Hygiene's report is all the more perceptive. As Philip S. Broughton has pointed out, a swimming pool, library, or school is still considered a tax burden while a bowling alley, drive-in theater, or cocktail lounge is a sign of prosperity,33

By the end of the Civil War reform was in the air, and the return of soldiers aggravated the already short housing supply in New York City. Rents rose precipitously, focusing public attention on the issue. Another state legislative committee investigated, discovered the horrible conditions, and recommended a housing law. This time the Legislature responded with the Tenement Housing Law of 1867, a vague, loosely worded law which provided the builders, real estate companies, and private slum landlords with more than enough loopholes. It did, however, establish the principle that housing was a matter of public interest, and that

the government had the right to intervene for the protection of public health and human welfare.

General Mortality

A consistent complaint during the first sixty years of the nineteenth century related to the absence of proper vital statistics. Mortality figures, however, were fairly accurate, since burials involved an economic cost, and bodies were not too easily disposed of. Even here, however, there were many discrepancies. Bodies were frequently removed from the city for burial, sextons often failed to keep accurate records, and, particularly in the case of infants, many burials were unofficial. While the cause of death was generally recorded along with the name, age, and sex of the deceased, the state of medical knowledge rendered much of this information meaningless. For example, a large number of deaths were ascribed to such causes as convulsions, marasmus, flux, dropsy, hives, inflammations, fever, old age, and simply "unknown." Yet despite these discrepancies and inadequacies, the mortality records clearly show three facts: consumption, or tuberculosis, was consistently the leading single cause of death; the general mortality rate rose during the first half of the century; and the already high percentage of deaths in the age group below twenty years rose even faster than the general mortality.

The City Inspector's report for 1827 showed 5,181 deaths. Of these, 2,271 occurred among children below the age of five; and 1,336, almost 25 per cent of the total deaths, occurred among infants below the age of one. The causes of death in order of their significance were: consumption, 829; convulsions, 328; stillborn, 291; infantile flux, 238; dropsy in the head, 235; and old age, 202. In addition to the 829 consumption deaths, another 195 deaths were attributed to chest inflammation.³⁴

Five years later, 1832, the total deaths were listed at 10,359, of which 5,894 were adults and 4,465 were children. Since 1832 was a major Asiatic cholera year, the cholera deaths, 3,513, plus another 93 attributed to cholera morbus, led all the rest. As might be expected, the next ranking cause of death was consumption, 1,415. The following year the city mortality fell to a more normal figure of 5,746. Significantly children's deaths, 3,193, constituted well

over 50 per cent of the total mortality. In 1838 City Inspector Henry G. Dunnel revised the classification of diseases to make it conform to the new medical knowledge. Marasmus, he wrote, now included all deaths reported to the City Inspector's Office under the headings of decay, debility, tabes mesenterica, and atrophy. The classification "Inflammation of the Lungs and Membranes," he added, included all deaths reported as pleurisy, peripneumonia, bronchitis, cold catarrh, influenza, and pneumonia typhoides.³⁵

In 1840 Inspector William A. Walters estimated that the city's mortality rate was 1 to 40 among whites and 1 to 34 among Negroes. He also drew attention to the large number of deaths from consumption. This disease, he said, had consistently accounted for between one-sixth and one-seventh of all deaths. The ratio of consumption deaths to all deaths among whites, however, was 1 to 9.5, whereas among Negroes and foreigners it was 1 to 3.5. Thus, on a relative basis, over two and one-half times as many Negroes and foreigners were succumbing to consumption as were native whites. In his report Inspector Walters, conscious of the inaccuracy of his figures, reminded his readers that the mortality figures were derived from the burial records rather than the actual deaths. In commenting upon the report, the New-York Journal of Medicine and Surgery stated that the previous thirty years had witnessed a steady increase in infant mortality. The percentage of infant deaths had risen from 32 per cent in 1810, to 38 per cent in 1820, 44 per cent in 1830 and 50 per cent in 1840.86

Two years later City Inspector John II. Griscom greatly enlarged the section on mortality statistics and included an extended commentary on the city's health under the heading, "Remarks." Of the 8,475 deaths recorded this year, 4,123, or almost 50 per cent, occurred among children under the age of five. Griscom was the first City Inspector to notice the excess of male deaths over female. Among males, the death rate was approximately 1 to 36.5, whereas female deaths were 1 to 42.5. As usual, consumption was the leading cause of death, 1,339; followed by convulsions, 601; pneumonia, 530; cholera infantum, 513; scarlatina, 416; hydrocephalus, 394; and marasmus, 327. Thanks to Griscom's efforts, a city ordinance was passed requiring permits to remove bodies from the city for interment, and in 1843 City Inspector Walters,

who had returned to office, mentioned that the new ordinance had greatly improved the accuracy of the mortality statistics.³⁷

The wave of Irish immigration sharply increased the number of deaths attributed to dysentery, typhus, and typhoid. In 1848, for example, the total deaths were 15,919, of which 739 were diagnosed as dysentery, 720 as typhus, and another 223 as typhoid. The leading causes of death, however, remained much as they had been in previous years: consumption, 1,869; convulsions, 1,193; and marasmus, 680. During the peak years of immigration the pattern remained the same, with consumption always heading the list, but with typhus and dysentery assuming greater proportions. One notable change in the mortality report was the higher number of deaths in the lower age groups. In his report for 1850 City Inspector A. W. White commented upon the unusually high percentage of deaths among children below the age of 20. The deaths in this age group amounted to 10,567, over two-thirds of the total number of deaths. One reason for this increasing mortality was a steady rise in the number of deaths from measles, scarlet fever, and smallpox. Another was the many childbirth accidents, which White attributed to the large number of untrained physicians and midwives who had entered practice following the relaxation of the licensure laws.38

After 1855 the deaths from typhus, dysentery, and smallpox declined, and the mortality tables reverted to their former pattern with one exception, the rising number of deaths among infants. In his report for 1857 the City Inspector listed a total of 23,333 deaths, of which children accounted for 15,775. More significantly, almost two-thirds of the total child deaths occurred in the age group below five years. The leading causes of death among all groups were: consumption, 2,814; convulsions, 1,589; cholera infantum, 1,308; and dropsy in the head, 935.³⁹

For a forty-year period ending in 1844, the city's mortality rate, with minor fluctuations, remained fairly constant. Two exceptions were the 1832 and 1834 cholera years, when the death rate increased sharply. In the decennial period after 1845, however, New York's mortality rose markedly, reflecting clearly the heavy impact of the rising tide of immigration into the city and the disastrous effect of recurrent cholera and typhus epidemics. This change can be seen in the following table: 40

	Average Death Rate		Average Death Rate
Year	per 1,000	Year	per 1,000
1804–1809	28. I	1830-1834	35.6
1810-1814	22.9	1835-1839	27.6
1815-1819	29.0	1840-1844	26.2
1820–1824	27.1	1845-1849	39-3
1825-1829	28.8	1850–1854	40.7

Beginning in 1855, the city's death rate showed a decline from the high posted in the previous ten-year period, but the annual mortality ratio still remained much higher than that of the earlier part of the century:⁴¹

Year	Death Rate per 1,000	Year	Death Rate per 1,000
1855	34.I	18 6 0	27.9
1856	31.9	1861	27.2
1857	34.6	1862	26.1
1858	35.1	1863	31.0
1859	34-4	1864	31.5
		1865	34.2

Interestingly, the agitation for health reform was started during the years when the death rate per 1,000 population was climbing rapidly, but the blossoming of the public health movement came after the turning point had been reached, immigration had declined, and general health conditions were improving. Even the infant mortality rate, which had climbed to a record high of 165.8 per 1,000 in the period from 1850-1854, began to decline after 1855, dropping to 140.7 for the years 1855-1859, and 102.9 in the period 1860-1865-still an alarmingly high level. Considering the constant complaint by City Inspectors over the rising number of "stillborn and premature birth cases," it is clear that here was one area of public health relatively untouched by the medical profession or the health reformers. Appropos the so-called birth accidents, in 1845 a medical journalist noted that the 828 premature and stillbirth deaths represented over 9 per cent of the total deaths for the preceding year, and he drew attention to the increase in these deaths over previous years. In 1836 the ratio of premature and still-births to the population had been 1 in every 1,780, whereas in 1844 it had increased to 1 in 1,081, an increase attributed by the editor to the many charlatan midwives.⁴²

There can be little doubt that the rising child mortality in the 1850s was accounted for, in large part, by the children of the foreign-born. Though separate figures were not given until 1861, the following table stands as a mute testimonial to the culture of poverty encountered by New York's newcomers: 18

3 7	Deaths of Children of	Deaths of Children of
Year	Native-born	Foreign-born
18 6 1	r,088	8,339
1862	1,235	9,621
1863	1,292	10,972
1864	1,702	10,947
1865	1,646	13,158

Ever mindful of the relationship between poverty and ill-health, the A.I.C.P. asserted in 1857 that the mortality among children under 20 had remained around 66 per cent for the nine years prior to 1857, but that in the latter year it had jumped to 73 per cent. This mortality, the A.I.C.P. declared, is "chiefly amongst the children of the poor, in the most filthy parts of the city."⁴⁴ To the intelligent observer, there was little question that the deleterious effects of the crowded and ill-ventilated tenements would bear most heavily upon children. Though the death rate of children of all age groups declined after 1855, the constant presence of communicable diseases, the poor food, and the deplorable environmental conditions in the crowded slums winnowed a proportion of the city's younger population that would have seemed inconceivable just a generation earlier.

As immigrants began pouring into New York, the percentage of Negroes in the city declined. As mentioned in a previous chapter, the percentage dropped from around ten per cent in 1790 to five per cent in 1840. Although Negro mortality increased during the first thirty-five years of the 19th century, it tended to fall off in the next thirty years. In 1825, when Negroes represented 8 per cent of the total population, they suffered 18 per cent of the total

deaths. In 1835 the Negro population had fallen to 6 per cent, and Negro mortality dropped to 11 per cent of the city's total. By 1845, Negroes represented only 4 per cent of the city's total population and accounted for but 5 per cent of the total mortality. The average annual Negro death rate per 1,000 showed a similar decline: from a high of 56.1 in the period 1825-1829, it dropped to 38.5 in 1850-1854, and further declined to 30.9 in the years 1860-1865. The improvement in the mortality statistics for the Negroes vis-à-vis the whites may have reflected an improvement in their economic and social position. More likely, however, it reflected a static population with a higher percentage of individuals in the upper age group. While the Negro death rate declined, it was still considerably higher than the general city average throughout the entire period under study. This fact alone speaks volumes for the relative economic and social position of the Negro in nineteenth-century New York.45

In summary, general health conditions in New York City remained fairly stable during the first forty-five years of the nineteenth century, and then deteriorated rapidly during the period 1845-1865. This, in spite of the fact that science was permitting advances in sanitation and environmental health, that the city was slowly developing its administrative agencies, and that technology was generally increasing wealth and productivity. The sheer number of newcomers to the city created enormous problems, problems which would have been difficult to solve under the best of circumstances. The deplorable condition of many immigrants at the time of their arrival, however, placed any immediate solutions well beyond the capacity of the existing municipal administration. By the mid-century scientific and technical knowledge was combining with a developing social consciousness and a spirit of humanitarianism to meet the challenges of industrialism and urbanism. Just as these forces were mobilizing for a frontal assault upon the closely related problems of poverty and disease, a temporary easing of the pressure of immigration greatly facilitated the fight to improve the city's health. The emergence of multi-story tenements in the 1850s aggravated certain conditions, but the rising crescendo of outraged and emotional protests against slum conditions represented as much the birth pangs of a new social consciousness as it did any worsening of slum conditions. The affluence of society had caused the reformers to raise their sights and made them horrified at conditions which their forefathers might have taken for granted. From the present day viewpoint, living conditions for the vast majority of New Yorkers were exceedingly grim in the 1860s. Yet the turning point had been reached, and the passage of the Metropolitan Health Act of 1866 guaranteed that henceforth the trend was to be sharply upwards.

Notes to Chapter 23

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- 2. Friedrich Kapp, Immigration and the Commissioners, 44.
- 3. Ibid., 46-49.
- City Inspector's Report, 1843, 1147-49; Docs. of Bd. of Aldermen, no. 101, IX, 1076-1217.
- 5. Docs. of Bd. of Aldermen, no. 79, IX, 896-901.
- 6. Ibid., no. 66, XI, 838-39.
- 7. Kapp, Immigration and the Commissioners, 51-56.
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- 11. N.Y. State Assembly Document Number 34 (Albany, 1852), 7-16.
- 12. Daily Tribune, November 26, 1853; Daily Times, November 22, 1853.
- 13. For examples, see Daily Tribune, January 18, April 11, May 2, 1854.
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- 15. Daily Advertiser, May 3, 1826.
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- 19. Roy Lubove, The Progressives and the Slums (Pittsburgh, 1962), 1-4.
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- 21. Benjamin W. McCready, On the Influence of Trades, Professions and Occupations (New York, 1837), 41-45.
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- 26. A.I.C.P., First Report of a Committee on the Sanitary Condition of the Laboring Classes in the City of New-York, with Remedial Suggestions (New York, 1853), 5: 14, 19-21, 25-28.
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- 31. Reports of the Sanitary Association of the City of New York [1859], 27-31.
- 32. City Inspector's Report, 1861, 24-25, 1864, 8-9.
- 33. Report of the Council of Hygiene and Public Health [1865], pp. lxvii-lxxxix; Lubove, The Progressives and the Slums, p. xiii.
- 34. City Inspector's Report, 1827, 4-13. For a full and detailed presentation of the mortality statistics used in this section, see the Appendix.
- 35. Ibid., 1832, 4-13, 1833, 4-13, 1838, 70-93.
- 36. Ibid., 1840, 639-40; N.-Y. Int. of Med. & Surg., IV (1841), 454-55.
- 37. City Inspector's Report, 1842, 139-207, 1843, 1144-50.
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- 41. Ibid.
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- 44. A.I.C.P., Fourteenth Annual Report, 1857, 27-28.
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24

The Fight for Reform

In the mid-nineteenth century, with so many technological problems still unresolved and no trained personnel, the sheer size of New York's mounting sewerage and sanitary problems would have tested the managerial skills of the best administrators operating under a well-organized municipal government. Unfortunately, neither of these conditions existed: the structure of the city government was a hodgepodge of patchwork, and intelligent and honest administrators were the exception rather than the rule. The caliber of civic officials had steadily deteriorated as the flood of immigrants pouring into the city overwhelmed the existing political order and replaced old voting patterns with new political machines. To make matters worse, conscientious middle and upperclass citizens, appalled at the ignorance, aparty, and "immorality" of the newcomers, tended to withdraw from political affairs, leaving the stage free to political bosses and corrupt office-holders.

Occasionally, realistic businessmen and humanitarian reformers joined forces, but divisions within the ranks usually limited their effectiveness. While some of these differences represented personality clashes among the reform leaders, most difficulties arose from honest disagreement. The medical profession generally supported sanitary and quarantine measures, but few physicians could agree on their precise application. The same held true for those citizens seeking a more effective municipal administration: the need for change was obvious, but what form should the new government assume? One of the simplest solutions was to bypass the municipal administration through the creation of independent agencies whose administrators would be appointed by the Governor. Another was to elect department heads and thus make them independent of the Mayor and Council. Both methods had

been tried, and while some benefits ensued, the net effect was to disorganize further the city administration. Not only did it result in a wide variety of semi-independent agencies with overlapping duties and responsibilities, but the Mayor lost control over his own officials.

In January of 1855 Mayor Fernando Wood reiterated an old complaint when he bitterly assailed the tendency to look to the Legislature for corrective action on municipal affairs. The city, Mayor Wood declared, was administered "by portions of six different charters," which had created nine executive departments, each "having undefined, doubtful, and conflicting powers." The heads of these departments, he continued, were elected by the people, and each one assumed himself "to be sovereign and independent of the others, the Mayor, or any other authority. . . . " A year later he returned to this theme, noting that department heads disbursed large sums of money yet were in no way accountable for their actions. It was small wonder, he said in another annual message, that a department head "too often retires from his post with a full purse. . . ." In Mayor Wood's case, one suspects he was more concerned over the loss of patronage than with the relative efficiency of the city administration. Nonetheless, on the few occasions when honest mayors were elected, they found themselves almost powerless.1

Throughout the 1850s there was continuous agitation for overhauling the city administration, and, as the decade drew to a close, the focus centered upon the inadequacy and inefficiency of the municipal sanitary program. In January of 1853 a large group of prominent citizens met at Stuvvesant Institute to consider "establishing a systematic City Reform. . . ." Subsequently Peter Cooper was elected chairman of the reform group. The movement, however, collapsed after a few meetings when the members could not agree whether to nominate their own candidates or to support selected candidates already in the running. While humanitarianism deserves much credit for improving political and social conditions in New York, a newspaper comment upon the reform effort in 1853 pointed up one of the reasons for its ultimate success when it declared that those most interested were "the business men and property-holders, those who are most heavily taxed under the present regime...."2

Fortunately for the advocates of a sound public health program, the inadequacies of the city government were glaringly revealed in the filthy streets, the uncollected garbage, the overflowing privies, and the varied stenches which assailed the nostrils of all New Yorkers. Physicians might debate the exact causal relationship between dirt and disease, but informed laymen were content simply to equate the two. Despite public disputes between leading physicians which besmirched the public image of the profession and internal clashes which lessened the effectiveness of its societies, the medical profession, individually and collectively, deserves much of the credit for awakening the public conscience and pushing the health movement to a successful conclusion.

Throughout the twenty-five years preceding the passage of the Metropolitan Health Act, physicians such as John H. Griscom, Elisha Harris, Joseph M. Smith, and Stephen Smith, were lecturing, writing, and using every possible means to arouse the attention of their colleagues and the general public to the growing sanitary needs. Dr. Griscom, a tireless worker, served on committees of the New York Academy of Medicine and the State Medical Society, testified before state legislative committees, and participated in every citizens' reform organization. In the long struggle for reform, Drs. Harris and Joseph M. Smith, along with many of their colleagues, performed veoman service. Dr. Smith served as one of three medical counselors to the Board of Health during the Asiatic cholera epidemic of 1840 and, when he became president of the New York Academy of Medicine in 1854, helped to mobilize the Academy's support for sanitary reform. His appointment as president of the Council of Hygiene of the Citizens' Association in 1864 was a recognition both of his long years of fighting and of the prestige which his name carried.3 As the drive for the Metropolitan Board of Health gained momentum in the 1860s, the roster of physicians and laymen who led the fight included the leaders of every progressive movement in contemporary New York society.

It is difficult to pinpoint the exact time when the agitation which led to the Metropolitan Board of Health actually got under way, but as early as 1852 Dr. Griscom, chairman of the New York Academy of Medicine's committee on public health, issued a long report in which he called for a reorganization of the city's health

administration. His recommendations were received favorably in the newspapers and medical journals and led one of the latter to the hope that municipal authorities would be moved "to some prompt and effectual measures of reform in the Department of the City Inspector, where it is imperatively demanded." Four years later, at a time when the Legislature was considering a bill for a new city charter, Dr. J. McNulty proposed a series of resolutions respecting the city health administration for the Academy to submit to the Legislature. After considerable debate, McNulty's resolutions were withdrawn and a committee consisting of Drs. Griscom, McNulty, and Blakeman was appointed to draw up new ones. Subsequently the same committee was asked to prepare a draft of a specific health act.⁴

The Daily Times, along with other newspapers, joined in the rising clamor for public health reform. In a long editorial entitled "Killing off our Children-By Authority," its editor bitterly denounced the intolerable odors arising from the stagnant water, offal, putrefying garbage, and dead animals which filled the gutters and vacant lots. Thousands of lives are lost, he wrote, "all because our mock sanitary officers have not the intelligence or the enterprise to fill up these sunken lots, and drain these poisoned valleys." The editor of another New York daily pointed "to the accumulating garbage in our Kennels [gutters]; to the choked and noisome condition of our sewers; to the somber cellars, reeking with impurity, in which scores of men, women and children are crowded; to the corner groceries, dealing out blue and red and white poison by the pennyworth; to the shambles in which is displayed the half-decayed flesh of beasts prematurely killed; to the heaps of unripe or of rotten vegetables . . . ;" and asked whether New Yorkers were not more apathetic and fatalistic than Orientals,5

The State Legislature, in its usual fashion, moved slowly on the proposed changes in the New York City government. In November of 1857 the Academy of Medicine, at the instigation of Dr. Griscom, again appointed a committee to present its proposed health bill to the Legislature. As chairman of the Academy's committee, Dr. Griscom wrote an 18-page pamphlet stressing the need for an efficient city health administration completely divorced from politics. The City Inspector's Department, he declared, had steadily deteriorated since 1845. Realizing the need for statewide support, he appealed to the State Medical Society to help bring about the needed laws. Nothing was achieved at the time, but Dr. Griscom's persistence began to show results the following year.

On October 6, 1858, he reported to the Academy that, largely because of a lack of attendance, his committee on public health had accomplished little, and he asked that the membership be broadened. In consequence, five new associate members were appointed to the section on public health: Drs. Joseph M. Smith, Elisha Harris, John McNulty, Alonzo Clark, and Samuel Rotton. Two weeks later Griscom successfully appealed for the addition of 16 more members to the public health section. An editorial in the American Medical Gazette that year demonstrates both the persistence of Dr. Griscom's reform efforts and the public divisions within the ranks of the medical profession. The Academy had rebuked Dr. D. M. Reese, the conservative editor of the journal, for a minor infringement of professional ethics, and he lashed back at the Academy and three of its members in particular. Speaking of Griscom, he referred to him as "the inevitable Dr. G., the standing candidate for City Inspector, Health Officer, and every other paying medical office, and who is ever lobbying about the City Hall and at Albany...." This misrepresentation of Dr. Griscom is more revealing of Dr. Reese than of Griscom, but his statement shows that the latter was recognized as a persistent lobbyist for health reform.

Although the reform leaders had devoted much of their attention to arousing the medical profession, the educational campaign directed at the public was gradually bringing results. A resolution from the Board of Supervisors of New York County declared: "An imperative necessity exists for such improvements in the details of the City Inspector's Department, and in the qualifications of its executive sanitary officers, as are dictated by the modern progress of science." Impressed by the growing public demand for change, in April of 1858 the State Senate appointed a select committee to "investigate the Health Department of the City of New York. . . ." During the ensuing months the committee held hearings and recorded testimony from 28 individuals, 20 of whom were physicians. Among those testifying, as noted in the chapter on the City Inspector's Office, was City Inspector George Mor-

ton, who argued that there was no need for further legislation. The whole issue, he said, had been trumped up by the New York Academy of Medicine in order to further "the selfish purposes and empty pretensions" of the medical profession. The testimony of Morton and his Superintendent of Sanitary Inspection, Richard C. Downing was more than offset by the evidence presented by Drs. Griscom, Harris, McNulty, and others, and when the committee reported its findings on February 3, 1859, it strongly recommended the establishment of an independent health department.8

The affirmative report of the select committee led to high hopes on the part of the reformers. The newspapers were almost solid in their backing, and organized support was rallying to the cause. That most effective of all groups, the Association for Improving the Condition of the Poor, which had consistently exposed the deplorable conditions among the poor, was redoubling its efforts. At this juncture, just as things seemed brighter, a measure of dissension broke out in the ranks of the Academy of Medicine, apparently resulting from a clash between Drs. McNulty and Griscom. In consequence of a disagreement over the wording of some proposed resolutions, a new committee was appointed which rewrote the series of resolutions respecting the impending health bill. On March 2 the Academy adopted the committee report and ordered the resolutions sent to the Legislature. Nonetheless, the divisions within the Academy tended to weaken its efforts.

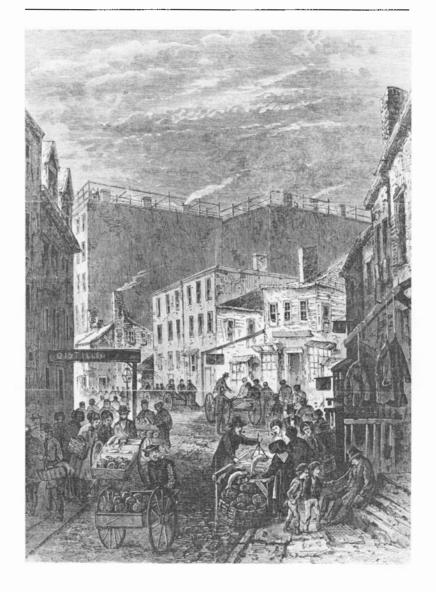
Fortunately, this temporary slackening of the Academy's enthusiasm was more than compensated for by the appearance of the New York Sanitary Association in January of 1859. Nearly all the outstanding physicians from the Academy's committee on public health were also active in the Sanitary Association: Dr. Griscom was the first vice-president, Dr. Harris, corresponding secretary, and Drs. Joseph M. and Stephen Smith served on the council. The majority of officers and membership, however, were laymen and included such familiar names as Peter Cooper, Egbert L. Vicle, and Prosper Wetmore. In its first annual report, the Association noted that the Academy "appeared to have ceased its efforts," leaving a void which the Association hoped to fill.¹⁰

When the final Senate vote was taken on the health bill, it passed by an overwhelming majority of 21 to 4. In the House the

vote was 61 in favor and 30 against, but the measure failed to gain the necessary 65 votes, or two-thirds majority. Although the Sanitary Association was bitterly disappointed, its members determined to renew their efforts. Despite the failure of the health bill, the Association at the end of 1860 declared that it had had a good year. Committees had been appointed to investigate a number of sanitary problems, a library of health-related books had been established, and public interest in sanitary affairs had been aroused.¹¹

The Sanitary Association worked closely with the Association for Improving the Condition of the Poor in the fight to obtain better health laws. In its report for 1860, the A.I.C.P. presented a detailed picture of sickness and misery among the poor and called for a drastic overhaul of health administration. It deplored the fact that "the importance of sanitary reform has not been duly appreciated by the benevolent in their labors for the moral benefit of the indigent." Gently rebuking such dilettante groups as the Ladies Missionary Society of Five Points, the report pointed out that physical and moral reform must go hand in hand. "Sanitary reform in its relations to large masses of the people," it declared, "may be said, indeed, to lie at the foundation of most other reforms, and cannot be ignored without defeating the objects which the philanthropic aim to secure." Many Christian charitable organizations, the report continued, were "rendered almost useless" by their failure to understand the moral degradation inherent in filthy, unsanitary conditions. 12

In the spring of 1860 a new health bill was proposed in the Legislature. This measure was far stronger than any of its predecessors. The most important change was a provision to establish a metropolitan health board having jurisdiction over Brooklyn and Richmond County in addition to Manhattan. Once again memorials and petitions were sent to the Legislature and newspapers editorialized in its favor. The only major journal to express any reservations was the Daily Tribune, which described the health bill as "much the best and most essential" of the bills pending before the Legislature, but declared that it was reluctant to see the power to appoint city health officials transferred to the state. On March 14 the Times asserted that the only opposition arose from "those paltry officials who hang like leeches to the municipal body,



Marketing at the Five Points, New York, circa 1850. Courtesy of the New-York Historical Society, New York City.

and who think . . . more of their paltry salaries than of the public good."13

Amidst a growing feeling of optimism, the Times warned editorially that there were strong secret enemies and cautioned the proponents of the health bill to be on the alert. At a meeting on April 6 the Sanitary Association expressed confidence in the bill's passage, but President F. E. Mather was quoted as having a few qualms. The suspicions of the Times and the uneasiness of Mr. Mather were all too well-founded, for a few days later the bill was defeated. Coming at a time of great expectations, this second setback discouraged the health reformers, and the movement lost its momentum for a year or two. Nonetheless, the grass-roots campaign to inform the public through meetings and printed media continued unabated. The A.I.C.P. hired Mr. E. Y. Robbins to present a series of lectures on public hygiene. Robbins, an enthusiastic worker, bombarded the Times with letters demanding sanitary reform. Moreover, support was gradually building up outside the city as more upstate New Yorkers realized that the failure to control communicable diseases in the city posed a threat to the entire state.14 The health bill was again introduced in the Legislature in 1861, but its proponents had lost their zest. Moreover, the sectional crisis was coming to a head, and it was relatively easy for the politicians to protect their patronage by quietly defeating the measure.

The outbreak of war provided an even greater setback to sanitary reform, since war relief associations began to preoccupy the attention of many responsible citizens. The creation of the United States Sanitary Commission, a civilian organization which prodded the moribund Army Medical Department into action and made a major contribution to the health and welfare of Union soldiers, temporarily cost the health reformers the services of a number of able men, most notably Dr. Elisha Harris, one of the founders of the Sanitary Commission. Events on the national scene, however, did not deter Dr. Griscom from his own private war on the miscrable health conditions in New York. At his urging, on October 6, 1861, the New York Academy of Medicine appointed a committee of five to cooperate with the Sanitary Association. Despite wartime limitations, the Sanitary Association held a public meeting on November 14 at which the Reverend Henry W. Bellows



Funeral from a tenement house on Baxter Street, New York, 1865. Courtesy of the New-York Historical Society, New York City.

spoke of the work of the Sanitary Commission and Dr. Griscom spoke of the need for health reform in New York City. In the course of his talk, Griscom charged that the City Inspector's Department had raised \$30,000 to defeat the health bill. Dr. Griscom's fight against the entrenched politicians had gained him no popularity in orthodox Democratic circles. At a November meeting of the Tammany-Mozart Democrats, he was reported to have been the "object of special bitterness." ¹¹⁵

By 1862 the advocates of health reform had weathered the opening year of the Civil War and had renewed their long fight for a health department. A health bill was proposed in the spring of 1862, and it once again received general support. The *Times* praised the measure for placing the entire Metropolitan District under one Board of Health. It was further pleased by the proposal to add two members of the Metropolitan Police Board to the Board of Health, and was delighted to note that the health officer would receive a fixed salary "instead of the indefinite and enormous fees now given him as compensation. . . ." These fees, the *Times* noted, occasionally reached almost \$50,000 per year.

The Richmond County Gazette began a long editorial in support of the bill by proclaiming that preventive medicine would "effect infinitely more for mankind than all the drugs which have vet been discovered, and all the curative skill which has ever been exerted for the alleviation of disease." After citing statistics to show that New York's death rate was steadily climbing and that its mortality statistics were unfavorable as compared to those cities with health boards under the control of physicians, the paper summarized the main provisions. Apparently the original bill had proposed the establishment of a Board of Health consisting of three physicians, four laymen, the health officer, the mayors of New York City and Brooklyn, and the supervisors of Richmond County. An amendment which the Gazette did not mention substituted two of the New York police commissioners for the mayors of New York and Brooklyn. The Daily Tribune, although a bitter opponent of the City Inspector's Department and an advocate of the health measure, was apprehensive that this amendment would make it possible to turn all Democrats out of office since the police commissioners were Republican state appointees. The editor urged that health administration be nonpartisan, or if it must

be political, that the responsible positions be divided equally among the two parties. Despite strong support, including that of the New York Academy of Medicine, the bill again failed to get the requisite vote in the Legislature.¹⁶

Disheartened by their repeated failures, the reformers apparently decided to concentrate more effort upon educating the public and thus bring pressure to bear upon the Legislature. For the next year or so, however, the health movement remained quiescent while its leaders regrouped their forces. The repeated charges that the City Inspector's Department had successfully lobbied against any reduction in its powers and responsibilities were probably justified. The budget for the Department was approximately \$470,000 a year, most of which was spent for cleaning the streets and markets. In light of the universal agreement about the deplorably filthy condition of the public thoroughfares, it is reasonable to assume that a good part of the budget was used directly or indirectly to influence the Legislature.

The success of the Metropolitan Board of Police, which had been established in 1857, posed a threat to the City Inspector's Department, particularly since the police had begun to inspect and supervise the cleaning of tenement houses—a job which the City Inspector should have been doing. In December of 1862 the City Comptroller proposed a budget of \$4,000 for the sanitary policing of tenements. Evidently the police were giving full value for their limited appropriation, at least if one can judge from the outraged protests emanating from the City Inspector's Department. In his report the Superintendent of Sanitary Inspection accused the police of interfering with the health wardens and inspectors and of usurping authority. Considering the negligible results obtained from the huge City Inspector's budget, its staff understandably did not want the Police Department to provide any measure of comparison.

The year 1863 saw two events of significance in the drive for an effective health department. The first was an amendment to the city charter on April 3 which further weakened the authority of the Mayor. It provided that city department heads were to serve for four years instead of two and could be removed only by the Governor. Possibly by intent, the new law enabled Alderman Boole, a machine politician whose name was an anathema to all

civic reformers, to remain as City Inspector until the position was abolished by the Metropolitan Board of Health. 19 Mayor Opdyke, under pressure from the Common Council, appointed Boole City Inspector in June of 1863, shortly after the amendment was enacted. Boole, backed by the large patronage of his new office, proceeded to run for mayor in December of 1863. Despite the support of both Tammany and Mozart Hall Democrats, he lost the election to Mayor Gunther. The Citizens' Association appealed to Governor Seymour to remove Boole, and Mayor Gunther ordered him suspended in the fall of 1864. Nonetheless, Boole managed to hang on to his office. Even more surprising, during these tumultuous years he also held title of alderman. Boole and his cohorts undoubtedly overreached themselves. Had Boole been removed and a more acceptable candidate placed in his position, some of the support for the health bill might have been lost. An effective City Inspector's Department could have remedied many abuses and undercut some of the arguments of the reform advocates. In terms of democracy, local health matters were properly the concern of the New York City government. The events of the succeeding years, however, gave little indication that the city electorate was either able or willing to live up to its responsibilities.

In the long run the Draft Riot of July, 1863, may have provided a far greater impetus to the health and social welfare movement than any single event. This riot, ostensibly precipitated by objections to the draft and which involved mob violence against Negroes, developed into a general attack upon property. Precisely how many casualties resulted from the four days of rioting and pillaging will never be known. The accounts vary widely, but Stokes' estimate of about 1,000 is a reasonably conservative figure. Whatever the exact number, the four days of horror made a sharp impact upon upper and middle-class New Yorkers. Most of them were oblivious to the appalling tenement conditions and completely unaware of the bitter frustrations endured by the erowded inhabitants of the squalid slums. In its report for 1863, the Association for Improving the Condition of the Poor devoted considerable space to the riot. Although critical of the barbarous way in which the Irish had treated the Negroes, the report pointed out with remarkable acuity that the Irish rioters were reacting against the frustrations of their environment. The Association conceded

its inability as a Protestant group to communicate with the Catholic immigrants and appealed to the Catholic clergy and hierarchy to increase their efforts.

The Council of Hygiene and Public Health of the Citizens' Association, in its report published in June of 1865, also took note of what it called the "political and social aspects" of sanitary neglect. "The mobs that held sway in our city during the memorable outbreak of violence in the month of July, 1863," the report declared, "were gathered in the overcrowded neglected quarters of the city." After referring to the "high brick blocks and closely-packed houses" from which the mobs had originated, it asserted that it was "difficult to believe that so much misery, disease, and wretchedness can be huddled together and hidden by high walls, unvisited and unthought of, so near our own abodes." Expressing what must have been the feelings of many middle-class New Yorkers, a newspaper reporter concluded his account with the following: "To walk the streets as we walked them, in those hours of conflagration and riot, was like witnessing the day of judgment, with every wicked thing revealed, every sin and sorrow blazingly glared upon, every hidden abomination laid before hell's expectant fire."20 The 1863 uprising awakened the compassion of a good many decent citizens and helped to convince those with little feeling for their fellow men that social reform was sound economics. It was becoming apparent to all that in the long run, social welfare was cheaper than revolution.

The year 1863 saw still another significant development. Pressured by Griscom and others, the New York Academy of Medicine, as already noted, had campaigned for health reform in the 1850s. As its enthusiasm—never too high—waned, its work had been picked up by the Sanitary Association. This latter body made a good fight, but its activities were hindered by the outbreak of the Civil War and the skillful lobbying of the City Inspector's Department. Although unable to achieve their goal, these two groups had laid a solid groundwork. The lull in reform activity which had followed the defeat of the 1862 bill came to an end in December of 1863. On December 12 a group of citizens, shocked by the upheavals of the preceding summer, met with Mayor Gunther, the recently elected reform candidate, to consider the city's social problems, and the result was the formation

of the Citizens' Association. The original committee, which included such well-known physicians as Drs. Elisha Harris, Willard Parker, Stephen Smith, and James Wood, was quickly expanded as prominent citizens flocked to the cause. A pamphlet was issued describing the initial meeting at Mayor Gunther's residence and calling for a drastic change in the city's sanitary administration. Early in February of 1864 the Citizens' Association appealed through the newspapers for public support. On this occasion Hamilton Fish, Peter Cooper, Morris Ketchum, and other prominent civic leaders signed the statement on behalf of the Association. The *Daily Tribune* praised the efforts of the Association but reminded the members that the real need was for action.²¹

Aware of this fact, the Association had already introduced another health bill into the Legislature. Its provisions were similar to those of the 1862 measure, and it embodied the principle that physicians should play a prominent role. A few days later the New York Academy of Medicine lent its support by voting to send a memorial to the Legislature on the need for sanitary reform. Realizing that physicians were best qualified to testify as to the city's health, on February 29 the Citizens' Association drafted a circular letter asking local doctors for their help. In response, a large number of them met on March 30, and at this meeting a "Special Council of Hygiene and Public Health" was organized. The officers of the Council of Hygiene, as it became known, were Dr. Joseph M. Smith, president, Dr. Willard Parker, vice-president, and Dr. Elisha Harris, secretary. In addition to these officers, Drs. Alfred C. Post, Isaac E. Taylor, and Stephen Smith served on the executive committee.22

While the Citizens' Association and the Council of Hygiene were mobilizing their forces, the indomitable Dr. Griscom issued a blast in pamphlet form against the City Inspector's Department in general and City Inspector Boole's administration in particular. Owing to "neglect, fraud and official ignorance" during the previous twenty years, he wrote, the health of New York had regressed to the level of London two hundred years ago. During this time the expenses of the Department had increased by five hundred per cent—and so had the city mortality. He pointed out that the metropolitan feature of the health bill was imperative, since disease did not recognize political or administrative bounda-

ries. Commenting upon the mortality statistics provided by Griscom and the Citizens' Association, the Daily Tribune declared that "no one needs to be told that the same Ring which picks our pockets completes the work by murdering us and our children." The same editorial, after describing the appalling sanitary conditions, spoke of the "seemingly hopeless subject of municipal reform," and attributed the previous failures to "the same resistance which has stopped reform all through history, namely, public endurance." The editor of the Times made the eminently practical suggestion that wealthy members of the Citizens' Association circulate among the "lowest laboring class" and explain the "evils of the present shocking sanitary management of the City. . . ." They should be told, he said, that the death rate among New York children was two or three times that of other cities and that every political job in the City Inspector's Department means "the deaths of their little ones from typhus and cholera."23

Writing many years after the fact, Dr. Stephen Smith stated that the Citizens' Association introduced a health bill into the Legislature in 1864 in order to pinpoint the opposition and had discovered that the real obstacle to health reform lay in the City Inspector's Department, Since the leaders in the Citizens' Association had also been active in the Sanitary Association, this information could scarcely have come as a surprise. Smith was on firmer ground when he wrote that the representatives of the City Inspector's Department denied the existence of abuses and unsanitary conditions, and presented statistical evidence to prove their case. It was to counter this evidence presented by Boole and his cohorts that the Council of Hygiene was organized and a decision made to conduct a thorough street-by-street sanitary inspection of New York City. This decision was made at the suggestion of Dorman B. Eaton, who had been selected to head the Council of Law, another committee established by the Citizens' Association.²⁴

Like its predecessors, the 1864 health bill fell by the wayside, but its failure on this occasion only aroused its supporters to greater efforts. The New York newspapers made a concerted effort to bring health matters to public attention, and the need for sanitary reform was a recurrent theme of editorials and newspaper stories. While the Council of Hygiene was conducting its survey during the summer of 1864, the Citizens' Association published

pamphlets and carried on an educational campaign to win over the electorate. Meanwhile, as noted before, City Inspector Boole was contributing to public outrage by his various peculations. In June the Citizens' Association asked Governor Seymour to remove Boole from office on the grounds that he had spent \$180,000 unnecessarily and had employed 250 men just prior to the election. The Governor, realizing that political wisdom occasionally requires statesmen to rise above principle, elected to steer clear. In the fall, after Boole's defeat in the mayoralty campaign, Mayor Gunther repeated the earlier charges and added that Boole's payroll contained names of persons who either "had no existence or could not be satisfactorily identified. . . ." He also submitted affidavits proving that many jobs in the City Inspector's Department were offered for sale. Boole, despite his defeat, still wielded considerable political strength and, with the backing of the City Council, as already indicated, managed to retain his position.²⁵

While Boole was gaining notoriety and the drive for health legislation was slowly making headway, the Council of Hygiene steadily pushed on with its sanitary survey. During the summer of 1864 the city was divided into 31 districts with a medical inspector assigned to each. These inspectors, who were paid \$30 a month, were selected largely from the dispensary physicians. These physicians, many of whom had served in the same district for years, were familiar with the houses and buildings in their districts, and were often personally acquainted with the residents. The survey began in early May and was not completed until the middle of November. In this period every street, alley, court, and building was personally visited by one of the inspectors. When finally completed, the detailed observations reported by the inspectors filled seventeen volumes, certainly for its day the most precise and exacting account of a city's health and social conditions ever compiled. During the course of the survey, the inspectors discovered almost 1,200 cases of smallpox within one two-week period and found another 2,000 eases of typhus. The Citizens' Association, realizing that the length of the report was self-defeating, spent several months reducing the Council's findings to one volume, which was first published in June of 1865. In the meantime, however, the appalling discoveries of the inspectors were brought to

the attention of the public through testimony before legislative committees, pamphlets, speeches, and other media.²⁶

Although the Council of Hygiene was still at work compiling the results of its survey, the Citizens' Association introduced another health bill into the Legislature in January of 1865. This same month the Senate appointed a committee to investigate the operation of the various city departments, but once the committee began peering into the murky operations of the City Inspector's Department its work bogged down. Although the resulting 500 pages of testimony gave conclusive proof of the need for reform, the legislators sensibly recognized that eliminating political patronage, no matter how grave the abuse, was a dangerous precedent to establish. A Times editorial on January 30 attributed the failure of all health bills during the previous ten years to the fact that "they interfered too seriously with party interests, and . . . were resisted with the whole force of the enormous patronage connected with the present system." As had happened on previous occasions, the health bill passed the Senate but ran into difficulties in the House. An indignant newspaper editorial in March demanded that the House committee, which was effectively blocking the bill, release its report. Every day of delay, the editor charged, only endangers the reform "and forwards the artful schemes of the City Inspector. . . . " The same editor a few days later expressed indignation over the "shameless and cynical indifference" of the well-to-do classes and bitterly denounced the health wardens whom he described as ignorant liquor dealers, usually disreputable in character," and "utterly disqualified by education, business, and moral character."27

Early in April the House bill was finally released by the committee. A newspaper correspondent wrote that its opponents made no effort to debate its merits, but sought to delay it by points of order and "other means of filibustering." He thought its chance of passage, however, was excellent. Although the members of the legislative committee had been favorably impressed by the testimony for the bill, Boole shrewdly asked for time to investigate the charges which had been made against his Department. By delaying action, he was subsequently able to mobilize enough political support to defeat the bill. The Legislature's action led the Daily Tri-

bune to charge that its members were as corrupt as the city officials. "The Health Bill," it declared, "was beaten by the free use of greenbacks, and could not have been beaten otherwise." The most encouraging sign was that Boole had been forced to use every resource to win his victory, and the closeness of the vote gave new heart to the health reformers.²⁸

In June, as already noted, the Council of Hygiene and Public Health released its one-volume report. Constant agitation by the newspapers and the Citizens' Association and its predecessors had created a favorable climate, and the report was widely hailed as a definitive study of New York's health problems. Its editors had carefully marshaled every sanitary and public health argument, buttressing their statements with direct evidence from the inspectors' descriptions of the various districts. After citing statistics to show that New York's death rate was well above that of comparable cities, the editors asserted that it could be reduced by 30 per cent, thus saving from 7,000 to 10,000 lives annually. They noted the abnormally high morbidity rate and pointed out that sickness, which fell heaviest upon the poorer classes, was "a most prolific source of physical and social want, demoralization and pauperism. . . ." In discussing the preventable causes of disease, the editors denied that these were "inevitable maladies, that can only be averted by Providence." The Council of Hygiene, they wrote, was fully in accord with "the rational convictions of the medical profession," believing that the chief causes of disease "are within the range and duty of human control; and that neither the truths of science nor a true respect for the beneficent Deity and His will, can warrant the opinion that man is irresponsible for the occurrence of evils that can and ought to be prevented by human effort and obedience to the Creator's laws."

The Council had been shocked to discover that smallpox was epidemic in the city. Within a few days its inspectors had found over 1,500 cases, a condition which the Council felt was unbelievable "in a civilized city in the nineteenth century." The Council's report condemned the policy of leaving vaccination to "casual, voluntary, and entirely unorganized methods" and argued for an adequate system of compulsory vaccination by municipal and state authorities. The one clear fact which had emerged from the sanitary survey, the report continued, was the close relationship be-

tween the standard of living and the extent of morbidity and mortality. Wherever crowding, poor drainage, and filth existed, there could be found sickness and death. In these nests of dirt, death, and disease, the preventable causes of sickness could be classified under two heads: external conditions and personal ones. While the two were closely related, the Council of Hygiene felt that the physical environment was both more significant and more amenable to improvement. It was the experience of all acquainted with the poor that the "worst personal causes of fatal disease not infrequently result from faulty external conditions, and they are at the same time so intimately associated with the worst moral evils and social misfortunes of the laboring classes." In the Council's opinion, an improvement "in personal and social conditions will follow close upon general hygienic provisions. . . ."

Under the heading, "localizing causes of disease," the report presented a strong argument for environmental sanitation, stressing the role of poor drainage and ventilation, overflowing cesspools and sewers, and dirty streets and gutters as precipitating factors in epidemics. The means for preventing communicable diseases were at hand: an effective force of medical inspectors to ferret out all cases and an enlightened and efficient sanitary police to maintain a healthy environment. Another prime need was to collect and study vital statistics. Such information would enable the health authorities to pinpoint potential focal points of disease before the situation got out of hand. The publication of these statistics, it was thought, would also exercise a salutary effect upon public opinion. The existing Bureau of Registration within the City Inspector's Department, the report declared, "is practically useless as a sanitary and life-saving agency...." The remainder of the report consisted of summaries of the findings of the individual inspectors, and it is clear that most of these men were intelligent and perceptive observers. Their graphic descriptions of tenements and alleys, their insight into the causes of misery and suffering, and their suggested remedies indicate that the Council had chosen its personnel wisely.29

The process of educating the public had been going on for many years, and the Citizens' Association was able to capitalize on the work of its predecessors. The Report of the Council of Hygiene and Public Health was only one aspect of the Associa-

tion's activities. A pamphlet in 1865 stated that the Association had distributed "two millions of publications relating to city affairs, scattered in every section and in almost every family." The many public meetings it sponsored had aroused not only New Yorkers but gained widespread attention throughout America and in Europe. The widely heralded Report of the Council of Hygiene and Public Health, under these circumstances, must have supplied the clinching evidence.

In August of 1865 the sanitary movement received still another impetus from the spectre of cholera. The newspapers announced that the disease was once again present in southern Europe and Asia and was rapidly pushing north and west, Horace Greeley reported in the Tribune that a member of the New York branch of the United States Sanitary Commission was urging that body to assume direction of a campaign to clean the city and thereby avert the worst effects of a cholera visitation. Greelev commented that the Sanitary Commission was probably the best private organization to undertake the job, but that the nature of the task was beyond the capabilities of a voluntary group. Once the money raised by private contributions was spent, the good works would end. In the event of a major calamity, "we shall see noble evidences of courage and energy, self-sacrifice and self-denial—our people daring death himself in the effort to destroy his horrors." Christian devotion and "romantic struggling with death" were all very fine, Greelev asserted, but what was really needed was "systematic, authoritative action." The real solution lay in an effective sanitary program operating on a year-round basis.³¹ This realistic appraisal by the Tribune sharply contrasts with the sentimentalism which characterized so much of the journalism and literature of the nineteenth century, and Greeley's approach to social problems has relevancy for the present.

Although cholera remained in the news during the succeeding months, it was not until October and November that scattered cases of what was suspected to be cholera were diagnosed. The *Times*, the *Tribune*, and other daily journals seized upon the threat of cholera as another major argument for passing the health bill. The arrival on November 4 of the steamship "Atlanta," which had suffered 19 deaths from cholera and had 60 cases aboard, brought a tightening of the quarantine and led George

Templeton Strong, a member of the United States Sanitary Commission, to observe in his diary that sanitation and not quarantine was the answer to New York's health problems. The Evening Post, he noted, was advocating that the U.S. Sanitary Commission be given responsibility for a citywide sanitary program, but he felt that this lay "far outside the duties . . . assigned to the Sanitary Commission in 1861." In any event, he declared, the Commission was preparing to liquidate itself, and the responsibility for New York City lay with the municipal government. Fortunately although there were enough cases of cholera to cause alarm, the disorder did not reach epidemic proportions.

Politics occupied a good part of public attention during the fall, with much of it focusing on the mayoralty race. To the despair of civic-minded citizens, John T. Hoffman, the Tammany candidate, won the election. In his first annual message delivered shortly after assuming office, Hoffman deplored the way in which the Mayor had been divested of so much of his power. Referring to the proposed health bill, he declared that the Legislature would probably enact a health law, but that he hoped it would not transfer responsibility to a state-appointed commission. Hoffman's election, however, was in itself convincing proof to the sanitationists that the only hope lay in removing health matters from the jurisdiction of the city government.³³

The final campaign to push the health bill through the Legislature got under way in December with the publication of a pamphlet entitled Address of the Committee to Promote the Passage of a Metropolitan Health Bill. This 68-page pamphlet began by explaining that a large group of influential citizens had met to consider the best means for gaining sanitary legislation and for dealing with the cholera. It noted that although Brooklyn was free of the inefficiency and corruption which characterized the health administration in Manhattan, the two cities were so closely related that a Metropolitan Health District was essential. Public indignation arising from the defeat of the last health bill, the pamphlet stated, had led to the downfall of many of the senators and representatives who had voted against it. Since then, the Council of Hygiene had prepared a new and comprehensive health measure incorporating the great advances which had been made in health administration in England.

The authors of the pamphlet then turned to the need for a change and attacked the existing health administration on three grounds: it was corrupt; its personnel was untrained; and its responsibility was so divided as to make it virtually meaningless. A detailed and devastating analysis of the city's health personnel followed in which the health wardens were described as "mere politicians who draw their large salaries and otherwise utterly neglect their official duties." The new bill, it was pointed out, proposed to join administrative ability with scientific medical knowledge by creating a Board of Health consisting of four physicians and four members of the Metropolitan Police Board. After listing the provisions of the bill, the authors concluded by appealing for public support on behalf of the "neglected, dying poor." 34

The Association for Improving the Condition of the Poor continued to campaign for reform in its Twenty-second Annual Report, 1865. The Association spoke highly of the survey made by the Council of Hygiene and heartily seconded the work of the Citizens' Association in its efforts to improve sanitary conditions. The leading newspapers were unanimous in their support, although the Daily Tribune had some reservations. Its editor, Horace Greeley, had consistently fought for health reform, and, despite his qualms, warmly espoused the cause of the new measure. On January 9 he pointed out that the bill would establish a Board of Health, a sanitary superintendent, an assistant sanitary superintendent (from Brooklyn), and no more than fifteen sanitary inspectors. These officials, together with a treasurer, secretary, corresponding secretary, and a few clerks, would comprise the total personnel of the health board. Except for quarantine officers, all other health agencies were to be abolished. Over and above the estimated savings of \$100,000 annually, he wrote, the consolidation of power was expected greatly to increase health administration efficiency. Although there was a chance of political money defeating the bill. Greeley concluded that the renewed threat of cholera plus the aroused condition of the public mind guaranteed the passage of some sort of health bill. In a subsequent editorial, he urged that the mayors of New York and Brooklyn be made ex-officio members of the Board and that two of the four proposed health commissioners be laymen.35

In the following week it became apparent that the Tribune's

objections to the measure reflected a clash between the Radical Republican faction, which it represented, and the Conservative Republicans whose chief spokesman was the *Times*. On February 1 Greeley charged that the present bill was designed to give Conservative Republicans, who controlled the Police Board, full power over any patronage arising from the proposed health department. He conceded, a little wearily, however, that if the health bill was not shaped so as to serve partisan advantage, "it is sure to be beaten." To Greeley's credit, although he felt that the proposed bill would strengthen the hand of the faction within the Republican Party which he opposed, he continued, through the *Tribune*, to give full support to it.³⁶

In reading the newspapers for the opening months of 1866, one can almost sense that passage of the health bill was a foregone conclusion. With only a few minor changes, the measure successfully negotiated both houses, and on February 26 officially became law. As finally written, it established a Board of Health consisting of four police commissioners, the Health Officer, and four other commissioners appointed by the Governor. The Governor's appointees were to be selected from residents of the district, and the law further stipulated that three of the four were to be physicians and one was to be a resident of Brooklyn. These sanitary commissioners were to hold office for four years, but their terms were to be staggered. Their salary was set at \$2,500 per year, except for the treasurer who was to receive an additional \$500. The police commissioners serving on the Board were to receive \$500. The Board was empowered to appoint "an experienced and skillful physician" as the city's sanitary superintendent at a salary of \$5,000 a year and two assistant superintendents at \$3,500.

Exceedingly broad powers were conferred upon the Board of Health. Section 6 gave the president of the Board all authority with respect to street-cleaning contracts that had previously been held by the City Inspector. Section 12 transferred all powers "for the purpose of preserving or protecting life or health, or preventing disease" to the Board. This long section which specifically named a wide range of responsibilities given to the Board is aptly summarized in the margin of the published law: "Powers heretofore conferred upon other boards, bodies, &c., for preservation of health in said district, are hereby exclusively conferred upon

Metropolitan Board of Health." The Board, for example, was empowered to deal with any nuisances or situations which it regarded as dangerous to life or health. It could order owners or occupants to rectify conditions or to cease and desist from any actions considered dangerous or unhealthy. The Board, furthermore, was authorized either to call upon the police to execute its orders or to have them enforced by its own officers.³⁷

In glancing back over the ten to fifteen years of agitation which finally culminated in the Act of 1866, it is not easy to assess credit. At a meeting on April 18 President James Anderson of the New York Academy of Medicine declared that the measure had "originated in the Academy of Medicine, and that the Health Bill should be regarded as the legitimate offspring of the Academy." Filled with a sense of virtue, the members promptly passed a resolution stating that a history of the health reform movement should be written for the Academy. A month later, on May 18, the Academy, still filled with a warm glow of satisfaction, passed a second resolution declaring that it would "cordially cooperate with the Board of Health in carrying out [its] plans for the improvement of the Metropolitan District." The honeymoon, however, proved short-lived. Soon afterward the Board of Health, over the protestations of the medical members, endorsed homeopathic practitioners. At the next meeting of the Academy an acrimonious debate ensued during which it was proposed to withdraw the resolution offering cooperation. As a compromise, a milder resolution was passed which merely criticized the Board's stand on the homeopathic issue.³⁸ The Academy had been one of the early leaders in the health reform fight, but once the movement began to gain public support, this medical association appears to have retired from the scene. Significantly, volume 2 of the Bulletin of the New York Academy of Medicine, which covers the period from October, 1862 to February, 1866, makes no reference to the strennous reform efforts of civic groups, nor is the work of the New York Sanitary Association or the United States Sanitary Commission even mentioned. The Academy deserves credit for its early stand in favor of reform, but it was only one of several organizations which contributed to the final success.

The work of the Association for Improving the Condition of the Poor has already been mentioned. In addition to advocating an effective program for amcliorating conditions in tenement areas, this body was one of the first to recognize the intimate connection between a degrading environment and a brutalized population. Almost from its inception it espoused sanitary reform, and for over twenty years the Association appealed for an intelligent and humanitarian approach to health and social problems. It played an important role in awakening the consciences of middle and upper-class New Yorkers, and the passage of the Act of 1866 reflects considerable credit upon its able and conscientious leadership.

The establishment of the New York Sanitary Association in 1859 marked a major step forward in the drive for a sound health program. For the first time a fusion of medical and lay reformers joined together to combat the highly organized political machine defending the old order. Although failing to achieve its objective, the Sanitary Association made public health a significant political issue and prepared the way for its successor, the Citizens' Association. Significantly, the *Daily Tribune* editorialized on March 29, 1866, that although the sanitary reform movement had begun about ten years earlier, it was not until the founding of the Citizens' Association that it assumed the character "of a great and important reform." In describing the sanitary investigations conducted by the Citizens' Association, the *Tribune* asserted that they "were upon a scale never before attempted in any country...."

The drive to push through the health law was successful because the Association was devoted to a program of general civic improvement and was thus able to mobilize political support on a broad front. In a pamphlet listing its gains during the legislative session of 1866, the Association claimed credit for an excise law placing control of liquor licensing under the Board of Health, a registration law to prevent fraudulent voting, and a measure designed to reduce the misuse of tax money. As noted earlier, the Association included in its membership virtually every New Yorker whose name was associated with reform during this period. The minor role of the Academy of Medicine in the 1860s may well be accounted for by the decision of physicians such as Elisha Harris, Willard Parker, Stephen Smith, Joseph M. Smith, and others to transfer their efforts from the limited stage of the medical society to the larger political arena of the Citizens' Asso-

ciation. Whatever the case, it was the Citizens' Association which aroused public support and brought the necessary pressure to bear upon the Legislature.⁴⁰

The excellent work of the New York newspapers in arousing public concern can scarcely be overstated. Their editorials constantly hammered away at the corruption in the City Inspector's Department, while news stories and articles repeatedly exposed the grim living conditions to be found in slum areas. Leslie's Illustrated Weekly occasionally seized upon health conditions as a newsworthy subject, and its artists and reporters graphically depicted the deplorable sanitary state of the crowded tenements. The Tribune and the Times, although occasionally differing on the specifics of reform proposals, consistently drew the attention of their readers to sanitary abuses and appealed for social and political reforms. The value of their support is all the greater, in view of the fact that their readers were largely the influential middle and upper classes.

The most difficult task is to assess the contributions of the many individuals who devoted time and energy to the health reform movement. Influenced by developments in England, public health historians have tended to play down the role of medical men in promoting the American sanitary revolution of the nineteenth century. Even Dr. James J. Walsh, the medical historian of New York, concluded that the efforts of New York physicians and the Academy of Medicine had little effect in bringing about sanitary reform. In a democratic society, support for any reform movement must have a broad base, and the ranks of health reformers invariably included responsible citizens from many walks of life. Yet there can be little question that individual New York physicians supplied leadership which brought sanitary reform to the city. The nature of the physician's work placed him in a position to observe the profound misery characterizing the lower economic groups and to see the close relationship between poverry and disease. No profession saw as broad a cross section of society as the physicians. In a day and age when medical care for the poor was largely a matter of charity, many doctors volunteered for service in the dispensaries and clinics. The recurrent epidemics which strained community medical resources to the limit provided a further guarantee that physicians would come in contact with a broad economic stratum. Those conscientious physicians who treated the sick and dying poor in dispensaries and in their miserable, filthy cellars and hovels could scarcely be oblivious to the pressing need for public health measures.

The only other profession which might have taken leadership was the ministry. Clergymen, however, were divided sharply along class lines, and, if they thought of social matters at all, tended to reflect the views of their congregations. The spirit of the times, moreover, was individualistic, and poverty and immorality were almost synonymous. Mistaking symptoms for causes, ministers were more concerned with lecturing the poor on their excessive drinking than in asking why they turned to alcohol, and they saw nothing inconsistent in urging individuals existing in absolute degradation to live pure and noble lives. The average church member, too, found it infinitely more satisfying to practice Christian charity through bestowing Christmas baskets on the deserving poor than to grapple with social and sanitary problems. There were ministers with a genuine concern for the poor and a firm understanding of the basic problems, but in comparison with the medical profession, their numbers were few.

In ranking the physician-reformers, four names immediately come to mind, John H. Griscom, Elisha Harris, Joseph M. Smith, and Stephen Smith, Griscom began the fight for public health early in the 1840s and remained in the forefront of every effort to improve the city's health until the passage of the Metropolitan Health Act of 1866. His brief tenure as City Inspector in 1842 set a new standard for that office and gave him a broad knowledge of New York's health problems. He was a perpetual gadfly, constantly irritating office-holders with his revelations of inefficiency and misconduct, jarring the Academy of Medicine and the State Medical Society out of their lethargy, nagging at state legislators, and seeking to arouse public concern through lectures and pamphlets. The passing years and ill-health deprived him of an active role in the final drive, but if any individual can symbolize the early public health movement in New York City, that man would be Dr. John H. Griscom.

Appearing on the scene later than Griscom, Dr. Elisha Harris proved a worthy successor. Like Dr. Griscom, his name was closely associated with every organization concerned with health reform—the A.I.C.P., the Academy of Medicine, the U.S. Sanitary Commission, the Sanitary Association, and the Citizens' Association. Almost invariably Harris' name can be found among the list of officers of these associations. He played a key role in the sanitary survey of 1864, and the decision to ask him to prepare the results for publication recognized both his leadership and ability. The third member of this group, Dr. Joseph M. Smith, was a highly respected physician and a former president of the New York Academy of Medicine. For years he constantly spurred the Academy to take a strong position on public health matters, and, like Harris, he participated actively in citizens' reform movements. As president of the Council of Hygiene, he played an important part in the final drive to enact the health bill into law.

In the period from 1858 to 1866, as the health movement gained momentum, a large number of physicians enlisted in the cause. Dr. Stephen Smith ranks high among this group. He was a leading spirit in the Sanitary Association and the Citizens' Association, an organizer of the Council of Hygiene's sanitary survey of New York, and an effective lobbyist. Dr. Willard Parker was another capable leader whose name, too, recurs in the annals of this period. He was a founder of the Citizens' Association, vice-president of the Council of Hygiene, and, according to the *Times*, the final health bill was drafted in his home. Among the other physicians who worked for health reform during the crucial years were Drs. Valentine Mott, Alexander H. Stevens, Isaac and James R. Wood, and James Anderson.

Effective as was the work of the physician-reformers, they could not have accomplished much without strong support from other prominent citizens. One of the best-known New Yorkers, Peter Cooper, gave both time and money to the cause. A leading political figure who played a key role in the final stage was Dorman B. Eaton, probably best known in American history for his support of civil service reform. According to Stephen Smith, it was Eaton who stressed the need for public education and urged that the findings of the sanitary survey be widely circulated. A keen student of government and law, Eaton, once he became concerned with public health, made an intensive study of the English public health experience and decided to apply the lessons to the New York scene. Taking the bill which the Citizens' Association

had introduced into the Legislature in 1865, he drastically revised it. Faton not only wrote into the measure specific provisions transferring all existing public health authority to the new Board of Health, he also included statements giving the Board broad sweeping powers. As the author of the proposed measure, Eaton was selected along with Harris to defend it before the legislative committee.⁴²

The only major figure to represent the ministry was the Reverend Henry W. Bellows, one of the three founders of the United States Sanitary Commission and an inveterate reformer. He was an active participant in all health reform organizations, an effective speaker, and a valiant fighter. Two other individuals in the forefront were Fgbert L. Viele, an outstanding sanitary engineer and architect, and Professor John W. Draper, a leading scientist and medical educator. Both of these men participated actively in the long struggle to pass the Metropolitan Health Act of 1866 and later helped to make the new health administration more effective.

The passage of the Metropolitan Health Act of 1866 marked a new era both for New York and for American public health, for the principles which its chief architect, Dorman B. Eaton, introduced into the United States were to have a far-reaching impact upon the development of American public health administration. Ironically, although the measure was hailed as a great step forward, in terms of the spirit of American democracy the decision to take away still another large area of political responsibility from the citizens of New York City and bestow it upon an agency created by and responsible to the State was not necessarily wholesome. City Inspector Boole asserted bitterly-and with some justicethat the Act added "one more encroachment upon our right to govern ourselves." It could be argued that the forces of political corruption operated as effectively at the state level as at that of the city and that transferring health authority from one to the other could have provided only temporary relief. 43 In a democratic society the enforcement of sound health laws depends upon consensus; hence the health reformers might better have concentrated their efforts upon educating the residents of New York City, Yet these men had been struggling for years against almost insurmountable obstacles, and the creation of the Metropolitan Board of Health was a means of cutting the Gordian knot. It certainly brought an immediate improvement in the city's health and sanitary conditions. The state-appointed Board may have countered the spirit of democratic self-government, but it did bring results—and with human lives at stake, the reformers can scarcely be criticized on grounds of abstract political theory.

Notes to Chapter 24

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- Daily Tribune, January 14, February 5, May 25, August 2, October 8, 1853.
- W. C. Roberts, Eulogium upon the Life of J. M. Smith (n.p., 1867), 34-35.
- Daily Times, July 13, 1852; N.-Y. Med. Gaz. & Inl. of Health, III (1852), 188-89; N.Y.A.M., Minutes, February 6, March 5, 1856, pp. 459, 462.
- 5. Daily Times, June 25, 1856; Daily Tribune, April 15, 1857.
- N.Y.A.M., Minutes, May 5, 1858, pp. 552-53; John H. Griscom, Improvements in the Public Health . . . (Albany, 1857), 4, 14-18.
- N.Y.A.M., Minutes, October 6, 20, 1858, pp. 560-62; Van Ingen, New York Academy of Medicine, 91.
- 8. Reports of the Sanitary Association of the City of New York [1859], 14; Report of the Select Committee . . . February 3, 1859, 1-2, 12-13, 20-21; Remonstrance of the City Inspector, Against the Proposed Bill . . . , 1-11, 16.
- 9. See A.I.C.P., Reports, 1857-1859.
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- 11. Reports of the Sanitary Association of the City of New York [1859], 16-22; New York Sanitary Association, Second Annual Report, 1860.
- 12. A.I.C.P., Report, 1860, 64 65.
- 13. Daily Tribune, March 19, 1860; Times, March 14, 1860.
- 14. Times, April 2, 4, 6, 10, 1860; Daily Tribune, April 10, 1860; Report of Physicians and Citizens upon the Value and Necessity of Sanitary Improvements and on Health Reform in New-York (n.p., n.d., c. 1863).
- N.Y.A.M., Minutes, October 2, 1861, p. 639; John H. Griscom, Sanitary Legislation, Past and Future (New York, 1861), 4-7; Daily Tribune, November 6, 14, 1861.
- Times, March 24, 1862; Richmond County Gazette (Supplement), March 29, 1862; Daily Tribune, April 15, 1862; N.Y.A.M., Minutes, April 2, 1862, p. 662.
- 17. Docs. of Bd. of Aldermen, no. 17, XXIX, 8.
- 18. Ibid., 9; City Inspector's Report, 1862, 25-27.
- 19. N.Y. State Laws, 86th sess., chap. 68, April 3, 1863, pp. 92-93.

- 20. Stokes, Iconography, V, 1908; A.I.C.P., Twentieth Annual Report, 1863, 21-23; Report of the Council of Hygiene and Public Health, of the Citizens' Association of New York upon the Sanitary Conditions of the City (New York, 1865), pp. xv-xvi.
- 21. Report of Physicians and Citizens; Reform in New York City, Address to the People of the City of New-York by the Citizens' Association of New-York (New York, 1870), 5; Daily Tribune, February 8, 1864.
- Daily Tribune, Vebruary 9, 1864; Medical Register of the City of New York... June 1, 1865, 191-92.
- Reply of John H. Griscom to the Citizens' Association of New York. March 10, 1864 [N.Y.A.M. pamphlet letter]; Daily Tribune, March 14, 1864; Times, April 10, 1864.
- 24. Stephen Smith, The City That Was (New York, 1911), 40-42, 172-73.
- 25. Daily Tribune, April 20, June 3, November 23, 1864; Times, May 27, June 30, 1864; Disease and Death in New York City . . . (New York, 1864); Stokes, Iconography, V, 1912-13; William C. Gover, The Tammany Hall Democracy . . . (New York, 1875), 51.
- 26. Smith, The City That Was, 52 57, 108-13; Stephen Smith, "The Origin and Organization of the Department of Health of the City of New York," Medical Record, XCIII (1918), 1115-17.
- 27. Stokes, Iconography, V, 1915; Times, January 30, March 6, 18, 1865.
- 28. Times, April 13, 1865; Daily Tribune, May 3, 1865.
- Report of the Council of Hygiene and Public Health [1865], pp. xi-xii, lii-lv, lvi lxviii, exxiii, passim.
- 30. Report of the Citizens' Association, Our Taxes, Markets, Streets and Sanitary Condition (New York, 1865), 5-6.
- 31. Daily Tribune, August 11, 16, 1865.
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- Stokes, Iconography, V, 1919-20; Gover, Tammany Hall Democracy, 52-53.
- 34. Address of the Committee to Promote the Passage of a Metropolitan Health Bill, December, 1865 (New York, 1865), 3, 5-8, 10, 17, 27, 33, 52.
- A.I.C.P., Twenty-second Annual Report, 1865, 34 ff.; Daily Tribune, January 9, 23, 1866.
- 36. Daily Tribune, February 1, 3, 6, 1866.
- 37. N.Y. State Laws, 89th sess., chap. 74, February 26, 1866, pp. 114-44.
- 38. N.Y.A.M., Minutes, April 18, May 18, June 6, 1866, II, 75, 81, 83; Van Ingen, New York Academy of Medicine, 132-33.
- 39. Daily Tribune, March 29, 1866.
- Important Reform Measures Possed by the Legislature of 1866 (New York, 1866), 7-11.
- 41. Times, February 9, 1866, quoted in Stokes, Iconography, V, 1922.
- 42. Smith, The City That Was, 44-46; Smith, "Origin and Organization of the Department of Health," Medical Record, XCIII (1918), 1115-17.
- 43. Stokes, Iconography, V, 1922.

Appendices

Appendix 1

Mortality Statistics of New York City, 1804–1865¹ Population, Deaths, and Death Rates

	Population	Deaths ²	Death Rate per 1,000	Average Death Rate
1804		2,084	27.5	
1805	75,770	2,297	30.3	
1806		2,174	28.7	28.1
1807		2,236	29.5	
1808		1,950	25.7	
1800		2,038	26.9	
1810	96,373	2,073	21.5	
1811		2,431	25.2	
1812		2,472	25.6	22.9
1813		2,207	22.9	
1814		188,	19.5	

1. Note on the Sources: Particularly valuable for the preparation of this appendix and several that follow was the Table of the Semi-centennial Mortality of the City of New York, Compiled from the Records of the City Inspector's Department, comprising the full period from January 1, 1804, to December 31, 1853, inclusive (New York: 1854). The table was prepared by City Inspector Thomas K. Downing in 1853. Separate copies can be found in the New York Academy of Medicine Library and the Haven Emerson Library of the New York City Department of Health. Also useful in preparing the appendices were the mortality compilations in the 1861, 1864, and 1865 City Inspector's reports. For some of the rables (particularly Appendices III, IV, V, and VII) the individual annual reports of the City Inspector were consulted, as the necessary information was not available in the general compilations.

Unless otherwise indicated, all population figures for this and the following appendices were taken from Benjamin F. Hough, Statistics of Population of the City and County of New York as shown by the State Census of 1865, with the Comparative Results of This and Previous Enumerations, and Other Statistics Given by the State and Federal Census, from the Earliest Period (New York: 1866). Several of the original federal and state census reports were also checked for more detailed information, but little was found beyond the material offered in the Hough compendium. Two corrections were made on the population totals for 1815 and 1820 because of arithmetic addition errors in the original Hough report.

2. Exclusive of stillborn.

Appendices

Арр. 1 (<i>соп</i>	It.)		Death Rate	Average
	Population	Deaths ²	per 1,000	Death Rate
1815	93,630	2,405	25.7	
1816		2,651	28.3	
1817		2,409	25.7	29.0
1818		3,106	33.2	
1810		3,008	32.1	
1820	125,847	3,326	26.4	
1821		3,368	26.8	
1822		3,026	24.0	27.1
1823		3,221	25.6	
1824		4,091	32.5	
1825	166,086	4,774	28.7	
1826		4,671	28.1	
1827		4,890	29.4	28.8
1828		4,843	29.2	
1829		4,734	28.5	
1830	197,092	5,198	26.4	
1831		5,991	30.4	
1832		9,975	50.6	35.6
1833		5,354	27.1	
1834		8,590	43.6	
1835	270,089	6,608	24.5	
1836		7,503	27.8	
1837		8,182	30.3	27.6
1838		7,533	27.9	
1839		7,361	27.3	
1840	312,710	7,868	25.2	
1841		8,531	27.3	
1842		8,475	27.1	26,2
1843		8,006	25.6	
1844		8,108	25.9	
1845	371,223	10,121	27.3	
1846		10,435	28.1	
1847		14,844	40.0	39-3
1848		14,892	40.1	
1849		22,605	60.9	

Mortality Statistics

Арр. 1 (<i>co</i>	nt.)			
	Population	Deaths ²	Death Rate per 1,000	Average Death Rate
1850	515,547	15,826	30.7	
1851		20,738	40.2	
1852		20,196	39.2	40.7
1853		21,127	41.0	
1854		26,953	52.3	
1855	629,904	21,478	34.1	
1856		20,102	31.9	
1857		21,775	34.6	34.0
1858		22,196	35.1	
1859		21,645	34-4	
1860	813,662	22,710	27.9	
1861		22,117	27.2	
1862		21,244	26.1	
1863		25,196	31.0	29.7
1864		25,645	31.5	
1865	726,386	24,843	34.2	

Appendix 2

Infant Mortality, New York City, 1804-18651

Year	Average Annual Stillborn	Average Annual Total Mortality	Average Annual Deaths under 5 Years
1804-1809	58	2,130	818
1810-1814	87	2,213	749
1815-1819	127	2,716	952
1820-1824	208	3,406	1,291
1825-1829	307	4,782	1,833
1830-1834	396	7,022	2,899
1835-1839	528	7,437	3,652
1840-1844	669	8,198	4,051
1845-1849	977	14,579	6,467
1850-1854	1,407	20,968	10,976
1855-1859	1,501	21,439	12,329
1860-1865	2	23,626	12,188

Exclusive of stillborn. The total city mortality figures are also exclusive of stillborn.

^{2.} After 1860 stillborn deaths were no longer separately reported.

Mortality Statistics

Average Annual Death Rate per 1,000 (Children under 5 Years)	Total Population under 5 Years	Deaths under 1 Year Per Cent of Total (Average Annual)	Average Annual Deaths under 1 Year	App. 2 (cont.) Deaths under 5 Years Per Cent of Total (Average Annual)
74.4	to,982 ³	20	430	38
54.7	13,693	17	369	34
71.0	13,371	19	517	35
71.7	17,994	20	679	38
76.7	23,853	2 I	992	38
102.4	28,287	2 2	1,515	41
93-4	39,100	26	1,899	49
85.5	47,431	25	2,064	49
119.3	54,191	23	3,319	4-1
165.8	66,156	28	5,774	52
140.7	87,578	32	6,765	58
102.9	118,477	32	7,473	52

^{3.} The white population under 5 years has been estimated for 1805 through 1820. The census classification for these years listed the white population in the following age categories: Under 10 years; 10 and under 16; 16 and under 26; 26 and under 45; 45 and above. The figure used in estimating the white population under 5 years for this period—14.8 per cent—was obtained by averaging the percentage of the under-5-year population to the total white population for the years 1830–1860, when census figures for this age category were available. The same procedure was followed in estimating the Negro population under 5 years for 1805 through 1850; full census figures were given thereafter. The white and Negro figures were then combined for the total population under 5 years.

Negro Mortality, New York City, 1821–1865¹

Negro Death Rate per 1,000 (Average Annual)	48.1	56.1	54.6	41.9	30.9	53.3
Per Cent of Negro Mortal- ity to Total Mortality (Average Annual)	14.0	0.41	10.0	80.	90.	40.
Per Cent of Negro Population to Total	60-	80.	.07	90.	50.	.04
Average Annual Negro Mortality	524	707	765	633	506	489
Negro Population	10,886	12,559	13,959	15,063	16,358	12,913
Total Population	125,847	166,086	197,092	270,089	312,710	371,223
	1821-18242	1825-1829	1830-1834	1835-1839	1840-1844	1845-18493

r. Inclusive of stillborn deaths. Separate figures on Negro stillborn were not given until 1836 and then only sporadically thereafter, From 1859-1865, stillborn deaths were excluded from the Negro and white mortality totals in the City Inspector's reports. In computing the comparative percentage of Negro mortality to the city's total mortality, stillborn deaths Negro mortality first separately reported in 1821. Negro deaths for 1829 and 1832 were estimated, as totals were not rewere included in the averages of both classes until 1858. ;

40.5 30.9

20.00

.03

531 478 389

13,815

515,547 629,904 813,662

1850-1854 1855-1859 1860-1865

12,574

3. An error in the City Inspector's computation listed rotal Negro deaths in 1846 as 560; the correct figure is 660. figure was used for both years.

ported. John Coffin, Assistant City Inspector in 1829, stated that Negro deaths were one-ninth of the total. The one-ninth

	Mortality	of the Foreign-	Born Population,	Mortality of the Foreign-Born Population, New York City, $1835-1865^{1}$, 1835-1865 ¹	
	Fotal Population	Foreign-Born Population	Average Annual Foreign-Born Deaths	Per Cent of Foreign-Born Population to Total	Per Cent of Foreign-Born Deaths to Total Deaths (Average Annual)	Foreign-Born Death Rate per 1,000 (Average Annual)
835-1839	270,089	31	1,903	:	2.5	
840-1844	312,710	:	1,930	:	24	:
845-1849	371,223	128,492	4,828	35	34	37.6
850-1854	515,547	235,733	966'9	46	34	29.7
855-1859	629,904	322,460	5,939	31	38	18.4
860-1865	813,662	383,717	7,469	7,4	32	19.5
. In comparin the city tota Also exclude . Foreign-born Robert Erns: The foreign. The foreign try. For 1865 given, a mor second-genel –1,088 death 1863—childre of iden" classific dren" classific dren" classific	In comparing foreign-born mortality to the city the city total. (By the very nature of the foreign Also excluded from the city's total mortality we Foreign-born population figures were not repor Robert Ernst, Insmigrant Life in New York City Try. For 1861–1865, when comparative figures egiven, a more precise picture of the ill-health ar second-generation child was much greater than 4089 deaths; children of foreign-born 1,392 deaths; children of foreign-born 1,392 deaths; children of foreign-born 10,3947. 1865 -children densification—included all under 20 years.)	ortality to the city ture of the foreign ortal mortality were see were not report in New York City, of necessity, exc parative figures of the ill-health an ouch greater than ign-born—8,339. 1,139. deaths; children Il under 20 years.)	In comparing foreign-born mortality to the city's total mortality, stithe city total. (By the very nature of the foreign-born classification, Also excluded from the city's total mortality were the deaths where Foreign-born population figures were not reported until the 1850 fe Robert Ernst, Immigrant Life in New York City, 1829–1863, p. 192. The foreign-born classification of necessity, excludes the mortality try. For 1861–1865, when comparative figures on the mortality of given, a more precise picture of the ill-health and poverty of New Second-generation child was much greater than that of children bo 1.088 deaths; children of foreign-born—8,339. 1862—children of native-born—1,322 deaths; children of foreign-born—1,322 deaths; children of foreign-born—1,322 deaths.)	the city total. (By the very nature of the foreign-born classification, stillborn and premature deaths have been excluded from the city total. (By the very nature of the foreign-born classification, stillborn and premature death totals are nonexistent.) Also excluded from the city's total mortality were the deaths where the nativity was unknown. Foreign-born population figures were not reported until the 1850 federal census. The 1845 figure is an estimate taken from Robert Ernst, Immigrant Life in New Vork City, 1825–1863, p. 192. The foreign-born classification of necessity, excludes the mortality of children born to foreign-born parents in this country. For 1861–1865, when comparative figures on the mortality of the children of native and foreign-born parents were given, a more precise picture of the ill-health and poverty of New York's "newcomers" can be seen. The mortality of the second-generation child was much greater than that of children born to native parents, viz: 1861—children of native-born—1,330, 1862—children of native-born—1,330, 1862—children of foreign-born—1,392 deaths; children of foreign-born—1,792 deaths; children of foreign-born—1,793 deaths; chi	re deaths have been ature death totals a mown. 445 figure is an estim foreign-born paren ive and foreign-bor ive an be seen. The rest, viz. 1861—children hs; children of foreign-born of foreign-born of foreign-born.	rexcluded from re nonexistent.) nate taken from its in this coun- n parents were nortality of the 1 of native-born ign-born-9,611. n-1,702 deaths;

Mortality of the Irish and German Foreign-Born Population, New York City, 1835-1865

					Don Cont of	Common		
					rer Cent on Irish-born	-deriniani- born		German-
		German-		Per Cent of	Deaths to	Deaths to	Irish-born	born
	Irish-born	born	Per Cent of	German-	Total	Total	Death Rate	Death Rate
	Mortality	Mortality	Irish-born	born	Deaths	Deaths	per 1,000	per 1,000
	(Average	(Average	Population	Population	(Average	(Average	(Average	(Average
	Annual)	Annual)	to Total	to I otal	Annual)	Annual)	Annual)	Annual)
1835-1839	1,212	179	:	:	91	2	:	
840-1844	1,195	227	:	:	15	33	:	:
1845-1849	3,097	743	261	7	13	'n	32.1	30.5
1850-1854	4,360	1,481	26	II	2.1	1~	32.6	26.7
1855-1859	3,550	1,376	28	\$1	7.1	7	20,2	14.3
860-1865	4,739	1,604	2.5	1.5	20	7	23.3	13.4

Scotland made up 5 per cent of New York City's immigrant population. Thus, in 1845, the Irish-born population probably made up only 21-22 per cent of the city's total.

V	
Annendiv	vinitaŭă v

801 130 130 131 162 504 506 141 Typhus Fever 114 Typhoid Fever Deaths from Specified Causes, Average Annual, New York City, 1804-1865 155 315 530 Smallpox and Varioloid Ξ 96 5 Whooping Cough 264 505 Scarlet Fever 120 56 105 126 səiseəM eirodthqiQ 165 545 Cronb જ 34 Teething 125 36 4 195 192 717 Inflammation of the Boyvels 39 59 162 928 117 142 115 137 158 627 Dysentery 8 107 424 216 Diarrhea 538 690 1,065 1,728 197 323 577 Convulsions 959 Cholera Infantum **y**simol**q** 1,140 279 396 549 592 Inflammation of the Lungs 6224 1,390 1,848 2,511 809 1,407 Consumption 77 Broachitis 825-1829 835-1839 845-1849 850-1854 804-1809 810-1814 815-1819 820-1824 830-1834 840-1844

Marasmus

2. Diphtheria deaths were first reported in 1857; there were 2 deaths in that year, 5 in 1858, and 53 in 1859. In 1860 diphtheria 1. Bronchitis deaths were first reported in 1839; there were 72 deaths in that year. deaths jumped to 422 and the number rose steadily thereafter.

7,197

135 213 236 302 337 645

81

1,515

1,554

226

651

302

662

1,034

338 221

\$50

384

1,714

1,107

2,842

855-1859

860-1865

591

1,414

195

1,082

628

App. 6 (cont.)								DEATH	RATE	PER 1,0	000						
Debility and Inanition	Λ voldod Λ	Dropsy	Dropsy in the Head	Scrofula	Гиез Успетев	Pucrperal Fever	TOTAL. MORTALITY ⁸ (Average Annual)	Consumption	egan. I odt to noitsmansfial	Cholera Infantum	Convulsions	Croup	Scatlet Fever	sumsere M	Dropsy (combined rotal)	Smallpox and Varioloid	Lyphus Fever
8	52	85	24	5	11	82	2,130	5.8	1.4	2.1	2.4	1.2	ı.	9.1	1.4 1	Ç.	0.1
:	39	8	45	4	12	81	2,213	6.2	1.5	1.1	9.1	0.1	*	:	4.1	'n.	4.1
:	54	%	46	12	11	20	2,716	6.5	6.1	ķ	6.1	œ	:	á,		r;	7.1
:	54	105	160	15	œ	50	3,406	5.4	7	0.1	1.6	ō.	:	1.1		r:	ó.
:	105	122	223	13	10	43	4,782	5.2	1.7	1.1	6.1	0.1	č	1.3		4	œ
:	105	135	321	13	œ	52	7,022	6.2	2.0	1.3	2.7	ō,	1.3	1.2		œ	4
25	113	142	349	2 I	20	54	7,437	5.5	2.0	I '5	5.6	ó	0.1	:		ø.	Ş.
7.5	113	148	413	39	91	54	8,198	4.5	0.1	1.3	6.1	ċ	0.1	I.1		Ş	4
358	44	223	561	%	22	801	14,579	5,0	2,0		5.9	۲.	4			o,	4:1
470	497	322	873	811	35	152	20,968	4.9	2,2	6.1	3.4	1.1	0.			o.	1.1
432	210	236	923	139	53	143	21,439	4.5	8.	2.2	2.7	o;	9.1	2.5		Š	4
707	318	343	984	4,	53	111	23,626	4.1	8.1	7.1	2.0	ထု	1.3	6'1	4.	.5	÷
f stillk statisti	oorn c	leaths, insign	ifican	t; wa	s less	than.											
	f.) fracility and Inanition fracility and Inanition fracility states of the property of the	f.) Debility and Inantition October 113 September 125 Fall Born of all 8 fatilitically statistically	7.) Debility and Inantition Apoplexy 2 26 88 3 8 88 3 8 442 223 4 70 497 322 fatiliborn deaths	App. 6 (cont.) App. 6 (cont.) In the property of the propert	1.) Debility and Inantition Apoplexy 2 26 85 24 5 3 9 8 45 4 5 3 12 223 15 3 113 142 349 21 5 113 142 349 21 5 113 142 349 21 5 113 143 39 7 113 148 413 39 7 318 341 223 561 84 4 70 497 322 873 118 fatiliborn deaths.	f.) Debility and Inantition Apoplexy Apoplexy Corolula Corolu	4.) Debility and Inantition Apoplexy 6 26 85 24 5 12 18 54 86 94 12 11 20 105 122 223 13 10 43 75 113 148 413 39 16 54 470 497 322 873 118 35 152 fatiliborn deaths. fatiliborn deaths.	ificant; was less than 1.	TOTAL. TOTAL. (Average Annual) 2,130 2,213 2,213 2,716 3,406 4,782 7,022 7,437 8,198 14,579 20,968 21,439 23,626	TOTAL. TOTAL. (Average Annual) 2,130 2,213 2,213 2,716 3,406 4,782 7,022 7,437 8,198 14,579 20,968 21,439 23,626	TOTAL. TOTAL. (Average Annual) 2,130 2,213 2,213 2,716 3,406 4,782 7,022 7,437 8,198 14,579 20,968 21,439 23,626	TOTAL. TOTAL. TOTAL. TOTAL. Annual) 2,130 2,213 2,214 2,213 2,214 2,213 2,214 2,2	TOTAL. TOTAL. TOTAL. TOTAL. TOTAL LATER PER 1,000 Annual 2,130 2,130 2,130 2,130 3,406 4,782 2,213 6,2 1.9 1.6 1.6 4,782 2,213 6,2 1.9 1.6 1.6 1.6 1.6 1.7 1.1 1.9 1.4,579 2,0 1.9 1.4,579 2,0 1.9 1.9 1.9 1.1 1.9 1.9 1.4,579 2,0 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.	Annual) 2,130	TOTAL. TOTAL. TOTAL. Average Annual) 2,130 2,130 3,406 4,106 4,	Annual) 2,130 5,8 14, 21, 14, 10 Convulsions 3,406 5,4 14,70 5,22 6,5 19 10,13,016 11,10 10,10 10,10 11,10 10,10 10,10 11,10	Annual) 2,130

Appendix 7

Deaths from Consumption of Negro and Foreign-Born Population, New York City, 1821–1865

Year	Total	Negro	Foreign-Born
1821	715	1051	
1822	624		
1823	683	76	
1824	736	107	
1825	843	118	
1826	820	117	
1827	829	100	
1828	906	99	
1829	88o		
1830	974	168	
1831	1,033	126	
1832	1,415	162	
1833	1,251		
1834	1,471	178	
1835	1,437		
1836	1,514	144	
1837	1,458	165	
1838	1,225	128	549 ³
1839	1,318	132	573
1840	1,296	136	549
1841	1,470	155	631
1842	1,339	119	591

^{1.} Separate, consecutive figures on Negro consumptive mortality first reported.

2. Foreign-born consumptive mortality first reported.

Appendices

App. 7 (cont.)

Year	Total	Negro	Foreign-Born	
1843	1,503	116	651	
1844	1,465	106	545	
1845–53 ⁸				
1854	3,032	164	1,889	
1855	2,635	141	1,582	
1856	2,478	99	1,513	
1857	2,814	110	1,734	
1858	3,046	130	1,939	
1859	3,239	132	2,126	
1860	3,186	84	2,106	
1861	3,025	86	2,069	
1862	3,170	55	2,084	
1863	3,485	8 o	2,282	
1864	3,615	91	2,369	
1865	3,394	83	2,151	

No breakdown on Negro or foreign-born consumptive mortality was given during these years. For the average annual total consumption deaths, see Appendix 6.

Appendix 8

Consumption Death Rate per 1,000 for Native White, Negro, and Foreign-Born Population, New York City, 1821–1865

	Native White	Negro	Foreign-Born	
1821	5.3	9.6	•••	
1825	4.7	9.4		
1830	4-4	12.0		
1836	5-4	9.5		
18441	3.6	8.2	4.2	
1854	3.7	11.9	8.0	
1855	3.1	12,0	4.9	
1856	2.9	8.4	4.7	
1857	3-3	9.3	5.4	
1858	3.3	11.0	6.0	
1859	3.3	11.2	6.6	
1860	2.4	6.7	5.5	
1861	2.1	6.8	5.4	
1862	2.5	4.4	5.4	
1863	2.7	6.4	6.0	
1864	2.8	7.2	6.1	
1865	2.8	6,6	5.6	

^{1.} The 1845 census figures were used in computing the respective consumption death rates for 1844. Ernst's estimate of the city's foreign-born population for 1845 was again used: Ernst, op. cit., p. 192. In viewing the rise in the native white consumption death rate in 1836, it should be remembered that foreign-born population and consumptive mortality figures were not reported at that time, though the number of foreign-born in the city was beginning to rise appreciably. The native white classification in 1836 undoubtedly included unclassified immigrant consumption deaths.

Deaths from Asiatic Cholera by Nativity Status, New York City, 1832–1854¹

	Asiatic Cholera Deaths	Native-Born	Foreign-Born	Nativity Unknown
1832	3,513	1,027	2,486	
1834	971	301 ²	670	
1849	5,071	1,627	3,2508	194
1854	2,509	586	1,903	20

- 1. The total Asiatic cholera deaths in the nonepidemic years, from 1833-1865, was 610. The highest nonepidemic total was recorded in 1852 when there were 374 deaths. In the other years, annual totals ranged from 0 to 57 deaths.
- 2. A separate listing of Negro Asiatic cholera deaths was given in 1834 and 1854. There were 79 Negro cholera deaths in 1834 and 37 in 1854.
- 3. Of the 3,250 foreign-born Asiatic cholera deaths in 1849, 2,219 were Irish; 583 were German; and 247 were English. This was the only year a nationality breakdown was given.

Bibliography

Bibliography

Manuscripts

Since the field of public health has many facets, any study of its origins necessarily requires the use of widely varied sources. The multiplicity of records for a city the size of New York made it most fruitful to concentrate upon printed material, but an effort was made to survey the extensive manuscript collections. Among the most useful manuscripts for the colonial period were the Cadwallader Colden Papers in the New-York Historical Society. Other manuscripts in the Society's collection which contributed to this study were Solomon Drown's A Long Journal of a Short Voyage from Providence to New York . . . , and Charles Lodwick's Account of New York, May 20, 1692. The Society collection also includes the Minutes of the New York City Health Comittee, 1793–1796, a particularly valuable source of information, since these were the years when yellow fever was making a major onslaught on New York City.

The New York City Municipal Archives and Records Center has only limited material on public health in the early period. The best records are the Board of Health, Miscellaneous Papers and Reports (1805–1850). For the mid-nineteenth century, the Minutes of the New York Academy of Medicine, 1847–, in the Academy's Library give a valuable insight into the role of the medical profession in the development of public health. The New York Academy of Medicine Library also holds the Peter S. Townsend manuscripts.

Two additional manuscript collections which provided useful information are first, the microfilm copy at the University of California at Los Angeles of the records of the Society for the Propagation of the Gospel in Foreign Parts, from which the letters

in series A and B were cited, and second, the Johnson Family Papers in the Yale University Library.

Printed Sources

Official Records: The most useful compilation and translations of official records for New York history in the colonial period are: F. B. O'Callaghan, ed., The Register of New Netherland, 1626–1674 (Albany, 1865); Berthold Fernow, ed., Records of New Amsterdam, 7 vols. (New York, 1897); Minutes of the Executive Council of the Province of New York, Administration of Francis Lovelace, 1668–1673, 2 vols. (Albany, 1910); Adriaen van der Donck, Remonstrance of New Netherland, and the Occurrences There, Addressed to the High and Mighty Lords States General of the United Netherlands, on the 28th July, 1649, E. B. O'Callaghan, trans. (Albany, 1856); Laws and Ordinances of New Netherland, 1638–1674, E. B. O'Callaghan, compiler and trans. (Albany, 1868); and Minutes of the Common Council of the City of New York, 1675–1776, 8 vols. (New York, 1905).

For the period from 1777 to 1866, the following official New York City publications proved equally valuable: Minutes of the Common Council of the City of New York, 1784-1831, 21 vols. (New York, 1917-1930); Proceedings of the Board of Aldermen, 18 vols. (New York, 1835-1845); Documents of the Board of Aldermen and Board of Assistants, of the City of New-York, 3 vols. (New York, 1832-1834); Documents of the Board of Assistants of the City of New-York, 2 vols. (New York, 1835-1836); and Documents of the Board of Aldermen, of the City of New-York, 28 vols. (New York, 1835-1867). A large collection of the published city laws and ordinances were examined, of which the following were used: Laws and Ordinances, Made and Established by the Mayor, Aldermen and Commonalty of the City of New-York, in Common Council Convened . . . 1827 (New York, 1827); By-Laws and Ordinances of the Mayor, Aldermen and Commonalty of the City of New-York, Revised 1838-1839 (New York, 1839); By-Laws and Ordinances of the Mayor, Aldermen, and Commonalty of the City of New-York, Revised 1845 (New York, 1845); The Revised Ordinances of the Mayor, Aldermen and Commonalty of the City of New-York (New York, 1856); and Ordinances of the Mayor, Aldermen and Commonalty of the City of New-York (New York, 1859).

The various health agencies of the city government published a great many reports and pamphlets. A number of these dealt with the yellow fever epidemics in the early national period and with Asiatic cholera in the later years. Some pamphlets were designed to educate the public and thus facilitate the enforcement of health measures. The following publications related to the appearance of yellow fever: Richard Bayley, An Account of the Epidemic Fever which Prevailed in the City of New-York, during part of the summer and fall of 1795 (New York, 1796), and his Letters from the Health Office, submitted to the Common Council of the City of New-York [New York, 1700]; Documents Relating to the Board of Health, Office of the Board of Health, November 13, 1805 (New York, 1806); Letter of the Hon. Stephen Allen, Mayor of the City of New-York to Joseph Bayley, Health Officer of the Port, . . . and Dr. Bayley's Report Thereon (New York, 1822) I this pamphlet can be found in the New York Public Library in a bound volume entitled A History of the Proceedings of the Board of Health . . . 1822]; and A History of the Proceedings of the Board of Health, of the City of New-York in the Summer and Fall of 1822 . . . (New York, 1823).

As already noted, other publications of the city health agencies related to a wide variety of topics: Extracts from the Various Laws Relative to the Preservation of Health in the City of New-York (New York, 1811); Address of the Board of Health of the City of New-York to their Fellow Citizens, June 18, 1824 [New York, 1824]; Bye-Law to regulate the Duties of the Resident Physician and Health Commissioner, Board of Health, May 26, 1827 [New York, 1827]; Address of the Board of Health of the City of New-York, to their Fellow Citizens, 1828 (New York, 1828); New York City Board of Health, Publication issued July 1, 1833 containing extracts of Laws and Ordinances [New York, 1833]; Report of the Proceedings of the Sanatory Committee of the Board of Health, in Relation to the Cholera as it Prevailed in New York in 1849 (New York, 1849); Reprints, Resolutions, and Proceedings of the Commissioners of Health of the City of New York for the Years 1856, 1857, 1858, and 1859 (New York, 1860); Special Report of the Health Officer of the Port of New-York to the Mayor and Commissioners of Health (New York, 1858); Majority and Minority Reports of the Select Committee of the Board of Health, Appointed to Investigate the Character and Condition of the Sources from which Cows' Milk is Derived, for Sale in the City of New York (New York, 1858); and Memorial of the Board of Commissioners of Health of the City of New York, on the Subject of Compulsory Vaccination with a view to Exterminate the Smallpox (New York, 1862).

Possibly the most useful sources of information on morbidity, mortality, and general health conditions in the years from 1804 to 1866 were the Annual Reports of the City Inspector, 1804-1809, 1816-1865. The title varies, particularly in the early years. For example, the City Inspector's Office issued a report in 1810 entitled A Comparative Statement of the Number of Deaths in the City of New-York during the years 1804, 1805, 1806, 1807, 1808, and 1809 (New York, 1810). The title changed in 1816 to Report of Deaths in the City and County of New-York, for the Year 1816 (New York, 1817). In later years the title was a variation of that used in 1844: Annual Report of the City Inspector of the City of New-York, for the Year 1844 (New York, 1845). Although the early reports were largely bills of mortality, the City Inspectors increasingly tended to comment upon general health and sanitary conditions as the century drew on. In the later period they were not above using public funds to subsidize pamphlets defending their administrations. The following are two examples of this: Remonstrance of the City Inspector, Against the Proposed Bill entitled "An Act to Improve the Public Health and Establish a Sanitary Police in the City of New York" (New York, 1858), and Communication of the City Inspector, Daniel E. Delavan, to the Commissioners to Amend Charter, Relative to the Reorganization of the Health Department of the City of New York (New York, 1861).

The Annual Reports of the New York State Commissioners of Emigration and the Commissioners of Public Charities and Correction contain a wealth of information. The Commissioners of Emigration issued annual Reports starting in 1847, and the Commissioners of Public Charities and Correction issued their first report for the year 1860.

Four miscellaneous pamphlets published by city officials are: New York Common Council, March 30, 1812, the Committee to ... report ... on the Provisions of the Act entitled, "An act for suppressing immorality" (New York, n.d.); Report of the Committee on Cleaning the Streets, July 30, 1827 [New York, 1827]; Report of the Committee on Laws of the Corporation of the City of New-York, on the Subject of Interment . . . , 9th June, 1825 (New York, 1825); and Report of the Select Committee of the Board of Education, in relation to the use of Public Schools for Hospital Purposes (New York, 1849).

The state records proved extremely useful. The volumes of the New York State Laws for the years 1789 to 1866 were examined for information bearing upon the health of New York City. Some volumes of the Documents of the Assembly of the State of New-York and the Documents of the Senate of the State of New-York were also checked. Several Select Committee reports proved informative, as well as the reports from the Marine Hospital and other institutions or agencies of mutual concern to the city and state. A pamphlet entitled An Act Relative to the Public Health in the City of New-York, passed April 10, 1850 (n.p., n.d.) may have been issued by the state but in all likelihood was published by one of the city agencies.

Medical Books and Pamphlets: The vellow fever epidemics of the late eighteenth and early nineteenth centuries brought forth a wealth of pamphlets, articles in medical journals, and books. The best general account of epidemics in the colonial period is Noah Webster, A Brief History of Epidemic and Pestilential Diseases ... (Hartford, Conn., 1799). The following pamphlets, which are essential to any study of the series of yellow fever epidemics which struck New York City from 1792-1822, are listed in chronological order, thus relating them to specific epidemics: M. L. Davis, A Brief Account of the Epidemical Fever which lately prevailed in the City of New York . . . (New York, 1795); Names of Persons who have died in New-York of the Yellow Fever, from the 29th of July, to the beginning of November, 1795 [New York, 1795]; Valentine Seaman, M.D., An Account of the Epidemic Yellow Fever, as it appeared in the City of New-York in the year 1795 (New York, 1796); James Hardie, An Account of the Malignant Fever, lately prevalent in the City of New-York . . . (New York, 1700); Record of Death, or an Accurate List of the Names, Places of Abode, Occupation, &c. of our Fellow Citizens, who have fallen Victims to the late FEVER . . . (New York, 1700); James Hardie, An Account of the Malignant Fever, which prevailed in the City of New-York, during the Autumn of 1805 (New York, 1805): Letters Concerning the General Health . . . as they lately appeared in the New-York Gazette, By a Householder (New York, 1805); Edward Miller, M.D., Report on the Malignant Diseases, which prevailed in the City of New-York in the Autumn of 1805, Addressed to the Governor of the State of New-York (n.p., n.d.); David Hosack, Observations on Febrile Contagion, and on the means of improving the Medical Police of the City of New York . . . (New York, 1820); A Statement of Facts Relative to the late Fever which appeared in Bancker-Street and Its Vicinity (New York, 1821); Paschal N. Strong, The Pestilence, A Punishment for Public Sins, Sermon . . . Reformed Dutch Church, Nov. 17, 1822 (New York, 1822); Peter S. Townsend, An Account of the Yellow Fever, as it prevailed in the City of New York, in the summer and autumn of 1822 (New York, 1823); and John H. Griscom, A History, Chronological and Circumstantial, of the Visitations of Yellow Fever at New York (New York, 1858).

Dr. Griscom was the city's most prolific physician-writer on medicine and public health. He wrote many articles for journals and society transactions and was responsible for a number of pamphlets and book-length reports, of which the following were particularly useful: Anniversary Discourse before the New York Academy of Medicine, Nov. 22, 1854 (New York, 1855); Improvements of the Public Health, and the Establishment of a Sanitary Police in the City of New-York (Albany, 1857); Medical Aid to the Indigent-Sanitary Police, Report of the Standing Committee on Public Health and Legal Medicine of the New York Academy of Medicine, Presented and Accepted, July 7, 1852 (New York, 1852); The Sanitary Condition of the Laboring Population of New York (New York, 1845); Sanitary Legislation, Past and Future, the Value of Sanitary Reform, and the True Principles for Its Attainment (New York, 1861); and The Uses and Abuses of Air, Showing Its Influence in Sustaining Life, and Producing Disease, with remarks on the Ventilation of Houses (New York, 1848).

A first-rate pioneer study of occupational health was Dr. Ben-

jamin W. McCready's, On the Influence of Trades, Professions and Occupations (New York, 1837), McCready, unfortunately, was too far ahead of his time, and his work had little immediate effect. Other medical publications which help to explain the development of medicine and public health in New York City are: Samuel Bard, A Discourse upon the Duties of a Physician . . . (New York, 1769); [John Walker Francis,] An Historical Sketch of the Origin, Progress, and Present State of the College of Physicians and Surgeons, of the University of the State of New-York (New York, 1813); Samuel W. Francis, Biographical Sketches of Distinguished Living New York Physicians (New York, 1867); Exposition of the Transactions Relative to the College of Physicians and Surgeons of the City of New York . . . (New York, 1812); A History of the New-York Kappa Lambda Conspiracy (New York, 1839); and Report of a Committee of the Medical Society of the State of New York, on the Subject of Medical Education (Albany, 1840).

Medical Journals: The first New York medical journal was published in 1798, and the number of these journals increased rapidly in the nineteenth century. Over and above the light they east on the medical theories upon which government action in the field of public health was based, medical journals supply a good insight into social and economic conditions. New York physicians played an important role both in the development of public health programs and in seeking to alleviate the social problems which lay at the basis of much of the sickness and disease. The following journals were carefully examined and found to be of help: Maryland Medical Journal, IX (1838); The Medical Repository, 6 vols. (1798-1803), second hexade, 3 vols. (1804-1806), third hexade, 3 vols. (1810-13), new series, 8 vols. (1813-1824); New-York Tournal of Medicine, and the Collateral Sciences, first series, 10 vols. (1843-1848), new series, 16 vols. (1848-1856), third series (title changes to New-York Journal of Medicine), 8 vols. (1856-1860); New-York Journal of Medicine and Surgery, 4 vols. (1839–1841); New-York Medical and Physical Journal, 9 vols. (1822-1830); New York Medical Gazette, 2 vols. (1841-1842); New-York Medical Gazette and Journal of Health, 5 vols. (1850-1854); New-York Medical Journal, 2 vols. (1830-1831); New-York Medical

Times, 5 vols. (1851–1856); and New-York Medico-Chirurgical Bulletin, 2 vols. (1831–1832). The Cholera Bulletin, I (1832), was a weekly publication by a group of New York City physicians which was issued during the height of the cholera epidemic of 1832.

Newspapers: During the eighteenth century, the two newspapers found most helpful were the New-York Gazette and the New-York Weekly Post-Boy. During the 1770s the Gazette was combined with the Weekly Post-Boy and published under the name, New-York Gazette Revived in the Weekly Post-Boy and the New-York Gazette or the Weekly Post-Boy. From 1773 to 1776 the Gazette was called the New-York Gazette and the Weekly Mercury. In the late eighteenth century the Commercial Advertiser and the Daily Advertiser provided good coverage. Citations were also made from the American Minerva, the American Weekly Mercury, the Journal and Patriotic Register, the Royal Gazette, and the Spectator (London). Three Boston newspapers which contributed to this study are the Boston Gazette, the News-Letter, and the Post-Boy.

The newspaper sources for the nineteenth century are more than ample. For the first forty years chief reliance was placed upon the Evening Post, but collaboratory and supplementary material was found in the Daily Advertiser, the American, the Evening Star, and the Sun. For the period 1840 to 1866 the Tribune or Daily Tribune and the Daily Times were carefully checked, and brief runs of the Sun, the Daily Express, the Commercial Advertiser, and the Richmond County Gazette were examined. A particularly valuable journal from the standpoint of health and social conditions is Frank Leslie's Illustrated Weekly Newspaper, founded in 1855.

Collections and Transactions: The best single printed source for New York history is the Collections of the New-York Historical Society (New York, 1868—). The nine volumes of the Letters and Papers of Cadwallader Colden (New York, 1918–1937), the two volumes of the Colden Letter-Books, and the two volumes of the Papers of the Lloyd Family of Lloyd's Neck, New York (New York, 1927) are particularly significant for the eighteenth century.

Other useful materials to be found in the Collections are the Diary of William Dunlap, 1766–1839 (New York, 1930), Kemble Papers (New York, 1884), and the Letters of John Pintard to his Daughter, 4 vols. (New York, 1940–1941).

Reference was made to the *Transactions* for the years 1769-1771of the American Philosophical Society, I (2d ed., Philadelphia, 1789) and to the Philosophical Transactions of the Royal Society of London, LV (London, 1765). For the mid-nineteenth century there are several valuable reports and transactions. The New York Academy of Medicine published three volumes of its proceedings for the years 1847 to 1871. These volumes are particularly good for delineating the Academy's role in the public health movement of these years. The A.I.C.P. issued its first publication in 1845, The First Annual Report of the New-York Association for the Improvement of the Condition of the Poor for the Year 1845, With the Constitution, Visitor's Manual and a List of Members (New York, 1845). These reports continued to be published vearly for the remainder of the century. Other than the second. third, and fifth reports, which were not available, this series provides one of the best general accounts of social conditions in New York City to be found anywhere. The leaders in the organization were articulate, perceptive and omnipresent. In addition to the annual reports, the A.I.C.P. published occasional pamphlets such as the following: Association for Improving the Condition of the Poor: First Report of a Committee on the Sanitary Condition of the Laboring Classes in the City of New-York, with Remedial Suggestions (New York, 1853).

As the sanitary reform movement developed momentum, two new associations appeared on the scene, both of which left complete records of their work. The first, the Sanitary Association of the City of New York, issued two major publications: Reports of the Sanitary Association of the City of New York in Relation to the Public Health (New York, 1859), and the Second Annual Report of the New York Sanitary Association for the Year Ending December, 1860 (New York, 1860). The outbreak of the Civil War contributed to the demise of this short-lived body, but its work was assumed by the Citizens' Association of New York. The most important publication of this latter group was the Report of the Council of Hygiene and Public Health of the Citizens' Asso-

ciation of New York upon the Sanitary Condition of the City (New York, 1865). This classic report of the survey of New York City made by the Council of Hygiene of the Citizens' Association in 1864 was an important factor in pushing through the Metropolitan Health Act and still remains the best single contemporary account of housing and living conditions in New York City.

The Citizens' Association also published a number of pamphlets and other works: Address of the Committee to Promote the Passage of a Metropolitan Health Bill, December, 1865 (New York, 1865); Disease and Death in New-York and Its Vicinity, Being a Report of Physicians and Citizens upon the Value and Necessity of Sanitary Improvements and Well-administered Health Laws (New York, 1864); Important Reform Measures Passed by the Legislature of 1866 (New York, 1866); Reform in New-York City, Address to the People of the City of New-York by the Citizens' Association of New-York (New York, 1870); Report of the Citizens' Association, Our Taxes, Markets, Streets and Sanitary Condition (New York, 1865); and Report of Physicians and Citizens Upon the Value and Necessity of Sanitary Improvements and on Health Reform in New-York (n.p., n.d.). Indirectly, the Citizens' Association was also responsible for another pamphlet, Reply of John H. Griscom to the Citizens' Association of New-York, March 10, 1864 (n.p., n.d.). One other useful work for health conditions in New York is the Proceedings and Debates of the Third National Quarantine and Sanitary Convention, held in the City of New York, April 27th, 28th, 29th, and 30th, 1859 (New York, 1859).

City Directories: New York was well supplied with city directories in the nineteenth century. For the most part they contained lists of names and statistical information, but they often included commentaries and descriptions of health conditions. Three directories were published for relatively long periods of time and were quite helpful: the first, Longworth's American Almanack, New-York Register, and City Directory, for the Twenty-fourth Year of American Independence (New York, 1799) ran from 1799 to 1842 and was usually referred to as Longworth's Directory; the second, the Manual of the Corporation of the City of New-York, for the Years 1841 & 2 (New York, 1841) was published for many

years after 1841 and was known as Valentine's Manual; the third of this group, The Directory of the City of New York, was published from 1852 to 1880, and was commonly called Trow's City Directory or Trows' Directory, after its publisher. A directory entitled New-York As It Is, in 1833, and Citizens' Advertising Directory (New York, 1833), was quite helpful. Subsequent volumes of New York As It Is for the years 1834–1835, 1837, 1839–1840 were also useful. Among the other manuals and directories used were: Duncan's Directory for the years 1792 and 1793; The City Election Hand Book (New York, 1844); Medical Register of the City of New York, particularly the volumes for the years 1861–1862 and 1865–1866; Rivington's New York Gazetteer, in the New-York Historical Society Collections, 1870 (New York, 1871); and Joseph Shannon, Manual of the Corporation of the City of New York (New York, 1869).

Descriptions and Diaries: Travelers' accounts of New York City are particularly valuable for the colonial period, and the comments of diarists supply illuminating insight into the historical scene at all times. The following contributed to this present study: Journal of Jasper Dankaerts, 1679-1680, in J. Franklin Jameson, ed., Original Narratives . . . Series (New York, 1913); Daniel Denton, A Brief Description of New York, formerly called New Netherlands with the Places thereunto Adjoining, 1670 (new edition, New York, 1845); Carl Bridenbaugh, ed., Gentlemen's Progress, The Itinerarium of Dr. Alexander Hamilton, 1744 (Chapel Hill, N.C., 1948); Charles H. Haswell, Reminiscences of an Octogenarian of the City of New York (1816-1860) (New York, 1896); Allan Nevins, ed., The Diary of Philip Hone, 1828-1851 (New York, 1936); Bayard Tuckerman, ed., Diary of Philip Hone, 1828–1851, 2 vols. (New York, 1889); Per Kalm, Travels into North America, John R. Forster, trans., 2 vols. (London, 1770–1771); Franklin D. Scott, ed., and trans., Baron Klinkowström's America, 1818–1820 (Evanston, Ill., 1952); Newton D. Mereness, ed., Travels in the American Colonies (New York, 1916); Henry C. Murphy, ed., Journal of a Voyage to New York, 1679-80, Long Island Historical Society Memoirs, I (New York, 1867); Allan Nevins and Milton H. Thomas, eds., The Diary of George Templeton Strong, Young Man in New York, 4 vols. (New York, 1952); and Charles Wolley, A.M., A Two Years' Journal in New York and Part of Its Territories in America, introduction and notes by Edward G. Bourne (Cleveland, 1902).

General Works and Pamphlets: Two useful general works are: James Hardie, Description of the City of New York (New York, 1827), and David T. Valentine, History of the City of New York (New York, 1853). Both studies are particularly valuable for the years immediately preceding their publication. Three contemporary writings dealing with the city water supply for the period from the establishment of the Manhattan Company to the introduction of Croton water are: Joseph Browne, A Memoir on Supplying the City with Pure and Wholesome Water (New York, 1799); Edmond C. Genèt, Communication on Public Health and Public Improvement (New York, 1818); and Charles King, A Memoir of the Construction, Cost, and Capacity of the Croton Aqueduct, Compiled from Official Documents (New York, 1843). Genet's pamphlet touches on water only incidentally and is chiefly concerned with the development of a sewerage system, while the other two are particularly good with respect to the water supply.

Several valuable accounts were written of the influx of immigrants into New York during the mid-nineteenth century. Among the best are: William J. Bromwell, History of Immigration to the United States (Redfield, N.Y., 1856); E. E. Hale, Letters on Irish Immigration (Boston, 1852); and two studies by Friedrich Kapp, Immigration and the Commissioners of Emigration of the State of New York (New York, 1870), and European Emigration to the United States (New York, 1869). Other miscellaneous pamphlets which provided useful information for the late eighteenth and first sixty-six years of the nineteenth century are: Chamber of Commerce, Report of Select Committee on Quarantine, adopted July 7, 1859 (New York, 1859); Charter and Ordinances of the New-York Dispensary (New York, 1797); Thomas F. DeVoe, Abattoirs, A Paper read before the Polytechnic Branch of the American Institute, June 8, 1865 (Albany, 1866); John S. Gould, A Report on Food and Diet, Suited for Almshouses, Prisons, and Hospitals (New York, 1852); William C. Roberts, Eulogium upon the Life . . . of Joseph M. Smith (n.p., 1867); Rules of the City Dispensary, for the Medical Relief of the Poor (New York, 1795); and Speech of Thomas N. Carr, in Support of Charges against Francis I. A. Boole, City Inspector, before his Excellency Horatio Seymour, June 3, 1864 (New York, 1864).

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York, Three Centuries of Medical Progress, 3 vols. (New York, 1919).

General: The classic compilation by Isaac N. Stokes, The Iconography of Manhattan Island, 6 vols. (New York, 1915–1928) is by far the most useful general work covering the history of New York City through the mid-nineteenth century. It is comprehensive and contains an unbelievable amount of detail. Two older histories are: Martha J. Lamb, History of the City of New York, Its Origin, Rise and Progress, 2 vols. (New York, 1877), and Benson J. Lossing, History of New York City, 2 vols. (New York, 1884). A fairly recent monograph, Sidney Pomerantz, New York, An American City, 1783–1803 (New York, 1938), is a thorough and intensive study of the city at the end of the eighteenth century. An earlier but also useful monograph is Arthur E. Peterson, New York as an Eighteenth Century Municipality Prior to 1731 (New York, 1917).

Two early secondary works specializing in the history of water and sewerage in New York City are still quite useful: George E. Hill and George E. Waring, Jr., "Old Wells and Watercourses of the Island of Manhattan," in *Historic New York*, M. W. Goodwin, et al., eds. (New York and London, 1899); and Edward Wegmann, The Water-Supply of the City of New York, 1658–1895 (New York, 1896). An excellent recent study is Annie S. Loop, History and Development of Sewage Treatment in New York City (New York, 1964). On the subject of public health legislation, Susan Wade Peabody has written a first rate monograph: "Historical Study of Legislation Regarding Public Health In the States of New York and Massachusetts," The Journal of Infectious Diseases, Supplement no. 4 (February, 1909).

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burgh, 1962); Gustavus Myers, The History of Tammany Hall (New York, 1901), Allan Nevins; The Evening Post, A Century of Journalism (New York, 1922); Christine C. Robbins, David Hosack, Citizen of New York (Philadelphia, 1964); and David M. Schneider, The History of Public Welfare in New York State 1609–1866, vol. I (Chicago, 1938).

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