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THE PUBLIC SCHOOLS OF SPRINGFIELD, ILLINOIS

A SURVEY BY THE DIVISION OF EDUCATION OF THE
RUSSELL SAGE FOUNDATION UNDER THE DIRECTION OF

LEONARD P. AYRES



THE SPRINGFIELD SURVEY
EDUCATIONAL SECTION

DEPARTMENT OF SURVEYS AND EXHIBITS
RUSSELL SAGE FOUNDATION
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THE PUBLIC SCHOOLS OF
SPRINGFIELD, ILLINOIS

A REPORT OF THE BOARD OF EDUCATION
FOR THE YEAR 1913-1914

BY
EDWARD F. BROWN

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CHAPTER I

THE SCHOOL SURVEY

The survey of the public schools was conducted in response to an invitation from the board of education and the superintendent. On December 3, 1912, the board adopted the following resolution:

Be it resolved by the Board of Education of District No. 186 that a committee of five be appointed, consisting of four members of the Board of Education including the Chairman, and one member of the Vocational School Commission. Said committee shall be empowered to act for the Board in co-operating in plans for a general survey of Springfield and to contribute a sum of money not to exceed \$1,000 from the treasury of said Board, the same to be used only in such part of a general survey as in their judgment will deal directly with school interests. Before this sum is definitely pledged, the plan decided on shall first be approved by the Board of Education.

Considerable delay intervened in arranging for the other portions of the general social survey of the city and it was not until over a year later that the board of education again took up the matter of the school survey. On December 13, 1913, the following record was entered in the board's minutes:

Mrs. Morrison moved that the President and the Secretary be authorized to sign pledge for \$1,000 for survey. Motion seconded and carried, all members present voting aye.

More than a month later further action was taken as is shown in another entry in the board's minutes under date of January 19, 1914. This entry reads as follows:

Mrs. Hanes moved that the Superintendent be authorized to extend a written invitation to Dr. Leonard P. Ayres of the Russell Sage Foundation to direct the work of the proposed survey of the city schools. Motion carried.

In response to this authorization the superintendent of schools sent a letter of invitation on the day following. This letter was as follows:

January 20, 1914.

DR. LEONARD P. AYRES,
Russell Sage Foundation,
New York City.

Dear Dr. Ayres:

A statement of the plan and scope of the proposed Springfield survey has been received by the committee having charge of this matter and a modified plan has been adopted. This plan includes the outline for the school survey as made by you.

At a meeting of the Springfield Board of Education held last night, the matter was taken up for discussion and the plan as outlined approved. I am directed by our Board to extend to you an invitation in their behalf to have charge of this important branch of the survey and to assure you of their co-operation in which I most heartily join as superintendent.

Very truly yours,

(Signed) HUGH S. MAGILL, JR.

PERSONNEL OF SURVEY STAFF

The survey staff consisted of four persons from the regular staff of the Division of Education of the Sage Foundation. These four persons are Dr. Leonard P. Ayres, Mr. R. R. Lutz, Miss Edna C. Bryner, and Mr. A. H. Richardson. They have all had extended teaching experience, three of them have had supervisory experience, and all have done investigation and research work in education. The data used in Chapter XIV were mainly secured in the Recreation Survey by Mr. Lee F. Hanmer and Mr. Clarence A. Perry, who put this material at the disposal of the School Survey.

TIME CONSUMED

The work of the survey has required the entire time of four persons for ten weeks and of two persons for five weeks. The four members of the survey staff devoted two weeks to preparatory work, spent three weeks in Springfield, and worked five weeks in tabulating data, interpreting the results, and doing the work incidental to publication. In addition clerical work

equivalent to five weeks for two persons has been consumed in the preparation of the report and its diagrams and illustrations.

COST

Although the appropriation of the board of education was the sum of \$1,000, the cost of the survey has been over \$3,200. The items of expense have been approximately as follows:

Salaries.....	\$2,300
Transportation.....	278
Meals.....	161
Hotel.....	142
Photographs.....	18
Printing.....	300
Half tones and cuts.....	50
Miscellaneous.....	12
Total.....	\$3,261

The expenses, other than those met by the board's appropriation, have been defrayed by the Russell Sage Foundation.

CO-OPERATION

Throughout the survey the members of the staff have had the most friendly and efficient co-operation of the members of the board of education, the superintendent, the staff of the board's office, the principals, and the teachers. Without this co-operation much of the work accomplished would have been impossible.

CHAPTER II

SPRINGFIELD AND ITS SCHOOLS

Springfield is in many respects a typical middle-western city of the more prosperous sort. It had a population of nearly 52,000 in 1910 and is growing rapidly. Four years ago there were 18 cities in this country besides Springfield of from 45,000 to 55,000 population. If we compare the census data for Springfield with those of the other 18 cities of similar size, we shall find that in nearly all of the comparisons Springfield is not far from the average.

It is growing rather more rapidly than the average city, having increased in population by more than 50 per cent in the past decade. It is not a congested city; as compared with the others in this group it has about the average number of inhabitants per acre. In the composition of its population it is an unusually American city. Of each 100 people in its population, 81 are native whites, 13 are foreign-born whites, and six are colored. Moreover, the proportion of native whites is increasing, while the proportion of foreign-born whites and negroes is decreasing. Almost two-thirds of the foreign born are natives of the British Isles or Germany.

The business interests of the city are in large measure commercial. While there is considerable manufacturing, it engages the services of a smaller proportion of the people than is the case in most of the other 18 cities in this group. Indeed, Springfield has in proportion to its population only one-fourth as many people engaged in manufacturing as some of these other cities of similar size.

Compared with the other cities of this group, Springfield has a high per capita wealth, an average tax rate, and a high expenditure for municipal government.

EDUCATIONAL FACILITIES

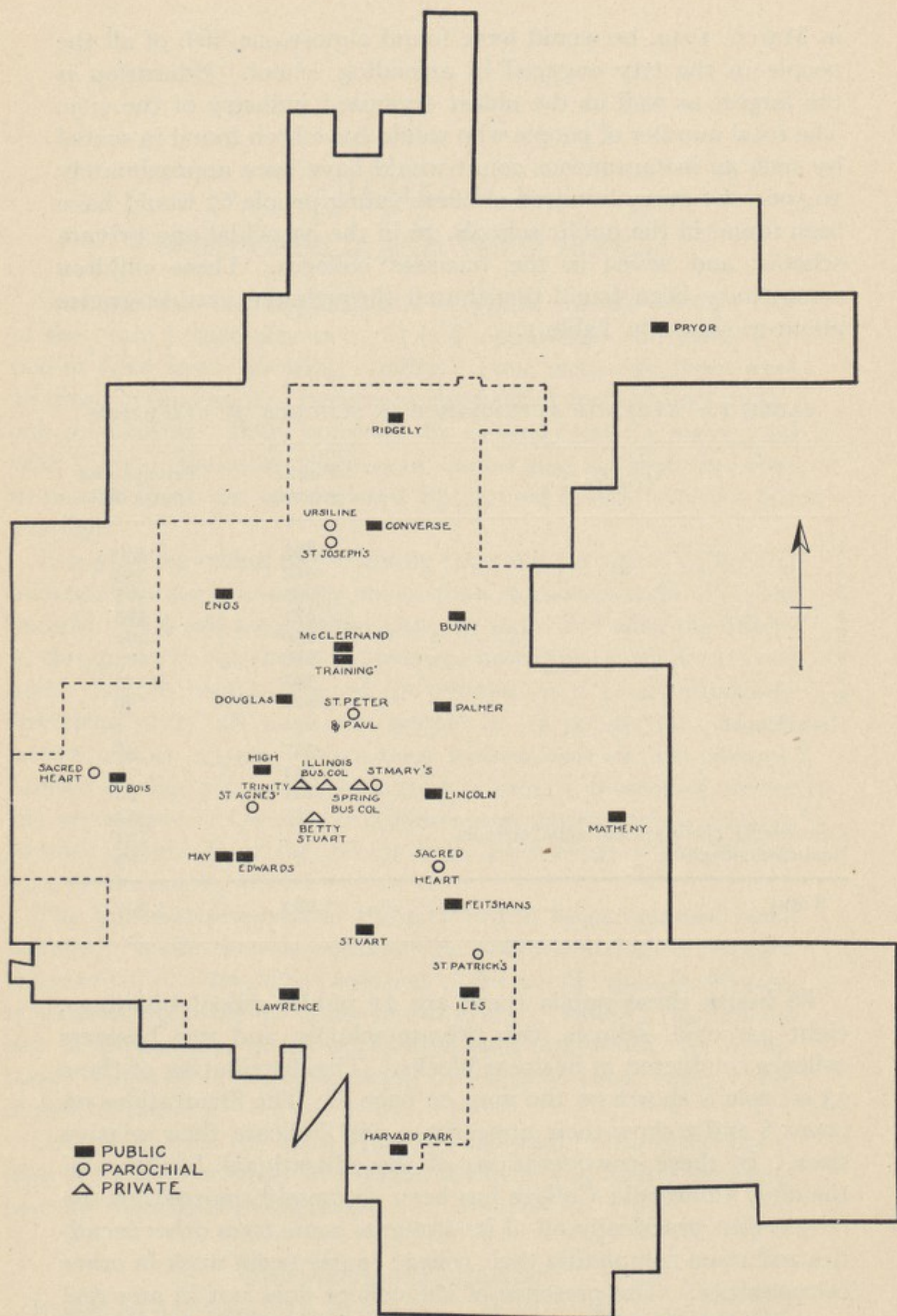
If anyone had been able to take an instantaneous census of the occupations of all the people in Springfield on some pleasant day

in March, 1914, he would have found almost one-fifth of all the people in the city engaged in attending school. Education is the largest as well as the oldest organized industry of the city. The total number of people who would have been found in school by such an instantaneous count would have been approximately 10,500. Of every hundred of these young people 67 would have been found in the public schools, 26 in the parochial and private schools, and seven in the business colleges. These children would have been found distributed through the various grades about as shown in Table I.

TABLE I.—AVERAGE ATTENDANCE IN SCHOOLS OF ALL KINDS

Grades	Public schools	Private and parochial
1.....	855	439
2.....	922	343
3.....	993	365
4.....	871	385
5.....	850	292
6.....	688	273
7.....	593	233
8.....	427	139
High School		
I.....	317	38
II.....	252	26
III.....	161	20
IV.....	153	23
Commercial classes in parochial schools.....	..	134
Business colleges.....	..	689
Total.....	7,082	3,399

To house these pupils there are 21 public school buildings, eight parochial schools, two private schools, and two business colleges conducted in business blocks. The distribution of these 33 schools is shown on the map on page 6. The illustrations on pages 8 and 9 show their appearance and indicate their relative sizes. In these considerations of the educational facilities of the city, Concordia College has been purposely omitted for the reason that practically all of its students come from other localities and upon completing their college course begin work in other communities. The presence of the college does not in any real sense increase the educational resources of the city.



MAP OF SPRINGFIELD SHOWING LOCATION OF SCHOOLS
 Solid line represents boundary of school district, and dotted line boundary of municipality

THE CITY AND THE SCHOOL DISTRICT

The schools of the city are administered by what is known officially as the Springfield School District, No. 186, County of Sangamon and State of Illinois. This district includes the city of Springfield and in addition considerable adjacent territory which is part of the district for school purposes but is not a part of the municipality. The area of the city of Springfield is something more than eight square miles, whereas the area of the school district is more than 17 square miles. Nevertheless more than nine-tenths of the population of the district is included within the borders of the city. The map on page 6 shows the boundaries of the school district as well as those of the city.

THE LEGAL BASIS OF THE SCHOOL SYSTEM

The school district is a state, not a municipal, organization. Unlike the police or fire departments, which are city institutions provided for in the city charter, the board of education owes its existence to a state legislative enactment. In 1854 the state legislature granted the city of Springfield a common school charter which vested in the city council the functions now exercised by the board of education. An amendment to this charter in 1869 created a school board of nine members appointed by the city council. In 1903 a state law was enacted to apply to cities having a population of over 35,000 by the Federal Census. This law fixed the number of members of boards of education at seven and provided for their election by the legal voters of the school district. These members were to serve for two years and two or three new members were to be elected each year. It was not until after the census of 1910 that the provisions of this law were applied to Springfield, the reorganization being effected in April, 1911. Under the provisions of this legislation the schools are now administered.

The new law confers upon the present board of education all the powers conferred by the state law on boards of education in school districts, trustees of schools in townships, and boards of directors. It elects its own treasurer, determines the amount of money needed for educational and building purposes, and certifies the same directly to the county clerk. Almost the only restriction of its power is that propositions to purchase school sites and to erect school buildings as well as to issue bonds for



THE TWENTY-ONE PUBLIC SCHOOL BUILDINGS

such purposes must be submitted to a vote of the people of the school district.

ORGANIZATION OF PUBLIC SCHOOLS

The organization of the public schools is shown in graphic form on page 10. The controlling authority is vested in the board of education, which consists of seven members. This board elects the superintendent who is the chief administrative officer of the



THE TWELVE PAROCHIAL AND PRIVATE SCHOOLS

school system. His office is in the offices of the board and for his immediate assistance he has a private secretary.

The other employees of the board attached to the central office are eight in number. They are the secretary, assistant secretary, treasurer, attorney, architect,—who is also superintendent of buildings,—bookkeeper, truant officer, and stenographer.

ORGANIZATION OF PUBLIC SCHOOLS

BOARD OF EDUCATION
7 MEMBERS ■■■■■■

SUPERINTENDENT OF SCHOOLS

SECRETARY ■
ASSISTANT SECRETARY ■

TREASURER ■
BOOKKEEPER ■
SECRETARY TO SUPERINTENDENT ■

ARCHITECT ■
ATTORNEY ■

TRUANT OFFICER ■
STENOGRAPHER ■

SUPERVISORS
HOUSEHOLD ARTS ■
DRAWING ■

MUSIC ■
HEALTH ■

SPECIAL TEACHERS
DOMESTIC SCIENCE ■
DRAWING ■

MUSIC ■
MANUAL TRAINING ■■

HIGH SCHOOL

PRINCIPAL ■
37 TEACHERS

883 PUPILS

DUBOIS

PRINCIPAL ■
12 TEACHERS
438 PUPILS

ENOS

PRINCIPAL ■
14 TEACHERS
424 PUPILS

LAWRENCE

PRINCIPAL ■

13 TEACHERS
417 PUPILS

STUART

PRINCIPAL ■
13 TEACHERS
417 PUPILS

ILES

PRINCIPAL ■
12 TEACHERS
415 PUPILS

RIDGELY

PRINCIPAL ■
11 TEACHERS
412 PUPILS

BUNN

PRINCIPAL ■
11 TEACHERS
378 PUPILS

DOUGLAS

PRINCIPAL ■
12 TEACHERS
372 PUPILS

LINCOLN

PRINCIPAL ■
11 TEACHERS
364 PUPILS

FEITSHANS

PRINCIPAL ■
11 TEACHERS
359 PUPILS

PALMER

PRINCIPAL ■
10 TEACHERS
353 PUPILS

CONVERSE

PRINCIPAL ■
9 TEACHERS
346 PUPILS

HAY

PRINCIPAL ■
8 TEACHERS
313 PUPILS

McCLERNAND

PRINCIPAL ■
8 TEACHERS
282 PUPILS

EDWARDS

PRINCIPAL ■
8 TEACHERS
273 PUPILS

MATHENY

PRINCIPAL ■
8 TEACHERS
238 PUPILS

TRAINING

PRINCIPAL 6 TEACHERS
15 PUPIL TEACHERS
227 PUPILS

HARVARD PARK

PRINCIPAL ■
4 TEACHERS
156 PUPILS

PRYOR

1 TEACHER
24 PUPILS

There are four general supervisors of special subjects: drawing, music, household arts, and health.

The schools are 20 in number and include the high school, the teachers training school, 17 graded elementary schools, and one ungraded one-room school. All of these save the one-room school are within the boundaries of the city. There are five teachers of special subjects: domestic science, drawing, music, and two of manual training.

Each school is administered by a principal except the Lawrence and Stuart schools, which are both under the supervision of the same principal, and the one-room school, which has but one teacher. There is a custodian or janitor for each building except the one-room school and additional assistants are employed to help them. The diagram on page 10 shows the number of teachers and pupils in each building and ranks the schools in the descending order of the number of pupils. The figures given represent actual attendance during the week of March 16, 1914.

To recapitulate: the public schools of Springfield included in their organization in March, 1914, the following persons:

Board of Education.....	7
Superintendent.....	1
Employees of central office.....	9
Supervisors of special subjects.....	4
High School principal.....	1
High School librarian.....	1
High School secretary.....	1
High School teachers.....	37
Training School principal.....	1
Elementary school principals.....	16
Teachers of special subjects.....	5
Training School teachers.....	6
Elementary school teachers.....	176
Pupil teachers in Training School.....	15
High school pupils.....	883
Elementary school pupils.....	6,199
Custodians.....	19

SUMMARY

1. Springfield is a prosperous, growing city having an unusually large proportion of native-born, white American citizens, a high per capita wealth, an average tax rate, and a high expenditure for municipal government. Its business interests are largely commercial, although there is considerable manufacturing.

2. The daily school attendance is about 10,500. Of every hundred of these young people, 67 are in public schools, 26 in parochial and private schools, and seven in business colleges.

3. There are 21 public school buildings, eight parochial schools, two private schools, and two business colleges, making a total of 33 buildings.

4. The school district is a state organization and includes more than twice as much territory as does the municipality, but over nine-tenths of the inhabitants of the district live within the city.

5. The board of education consists of seven members elected at large and has independent taxing powers within the limits imposed by law.

6. The public schools are 20 in number and are administered by the superintendent, 18 principals, and four general supervisors. Nine employees besides the superintendent are attached to the central office. There are 224 teachers and the average attendance in all public day schools is 7,082.

CHAPTER III

THE BOARD OF EDUCATION

The members of the survey staff attended three meetings of the board of education and made a careful examination of the minutes of the proceedings of all the meetings held during the past two years. The most important result was to bring to light the fact that the board holds a large number of meetings and does a great amount of work. Regular meetings are held twice a month and these are supplemented by adjourned, called, and special meetings, so that the board is in session for several hours almost every week.

In addition the board is divided into six committees and each member belongs to at least three of them. In the aggregate the board and its several committees transact a great amount of detailed administrative business. Such work is time-consuming and the members of the Springfield board are unsparingly generous in the time and attention they devote to the consideration of hundreds of petty details of school administration. Indeed, the duties of members of the board of education are so time-consuming that they must constitute a very real burden for any other than a person of means and leisure.

The truth is that much, if not most, of the business now transacted by the board of education would much better be left to its employed administrative officers. The existing situation is not so serious in Springfield as in many other cities, but it is serious enough to constitute a real handicap to the efficient working of the system. The members of the board are unquestionably deeply interested and unhesitatingly self-sacrificing of their time and business interests in the service of the schools. This altruistic interest and personal self-sacrifice are splendid and valuable assets to the city, but it is the conviction of the members of the survey staff that their effectiveness could be greatly enhanced if the board would devote itself in far larger measure to the broader questions of policy and delegate to its board officers the details of administration.

It is evident that the board is delegating to the present superintendent a larger measure of responsibility than it gave his predecessor. This tendency is in the right direction and the board may well follow it much farther. The superintendent and the principals of Springfield are highly paid. To them should be delegated much responsibility and they should be expected to use it wisely. If they cannot or will not, they should be replaced. It is a waste of money to purchase through large salaries a high grade of experience and ability and then not permit that ability and experience to be used.

The principles underlying the efficient management of a system of education are in salient respects similar to those underlying the effective organization of a corporation. The board of education is most effective when it assumes the position of a board of directors of a large corporation and gives to its employed executive officers the same measure of authority and responsibility which the directors of corporations delegate to their managers and superintendents. In a well run corporation the directors largely confine their activities to supplying funds, supervising expenditures, and determining what additions or reorganizations of the business are to be undertaken. These same functions may well constitute the bulk of the work of an efficient board of education.

The suggested change in policy may be illustrated by reference to the organization of the board's committees. There are at present committees on teachers, textbooks, course of study and rules, schoolhouses and furniture, high school, finance and supplies, and manual training and domestic science. It is almost certain that the affairs of the board would be more efficiently administered by having only three sub-committees—one on educational affairs, one on buildings, and one on finance. Such a consolidation and simplification of the committee work should bring with it a large reduction in the number of board meetings and committee meetings held. It ought to be possible for a competent board to conduct the affairs of the schools of Springfield by holding two meetings a month and in general not remaining in session more than an hour and a half.

This, however, can only be accomplished through the delegation of detail. Such a change would free the board from the dangers of petty politics and minor personal influences and the work and worry of attending to unimportant details. The mat-

ters which the board should resolutely delegate to its employed officers are those pertaining to the construction of schoolhouses, the selection of textbooks, the formulation of courses of study, and the selection, assignment, transfer, and dismissal of teachers and janitors. These are matters requiring expert knowledge and should be entrusted to professional experts.

The work of the board will be rendered far more effective when it is devoted to the consideration of the larger problems of the system. These relate to questions of finance, the selection and purchase of sites, the approval of plans for new buildings, the final decision as to extensions or reorganization of the educational system, the promotion of needed municipal or state legislation, and the representation of the needs and policies of the school system before the people of the city. These larger needs are the most important ones as they are the most difficult to meet adequately. The best efforts of the most competent men and women of the city are needed for the solution of these problems. They can never be adequately met while the board is spending most of its time considering minor details relating to the purchase of supplies, the equipment of specific rooms, the cleaning of floors, the making of repairs, and the thousand and one other little questions involved in carrying on so great a business as the Springfield school system.

THE OFFICES OF THE BOARD

The offices of the board of education occupy the top floor of one of the city's most centrally located office buildings. They are ample in size, light, cheerful, and well arranged. All things considered, they are exceptionally satisfactory.

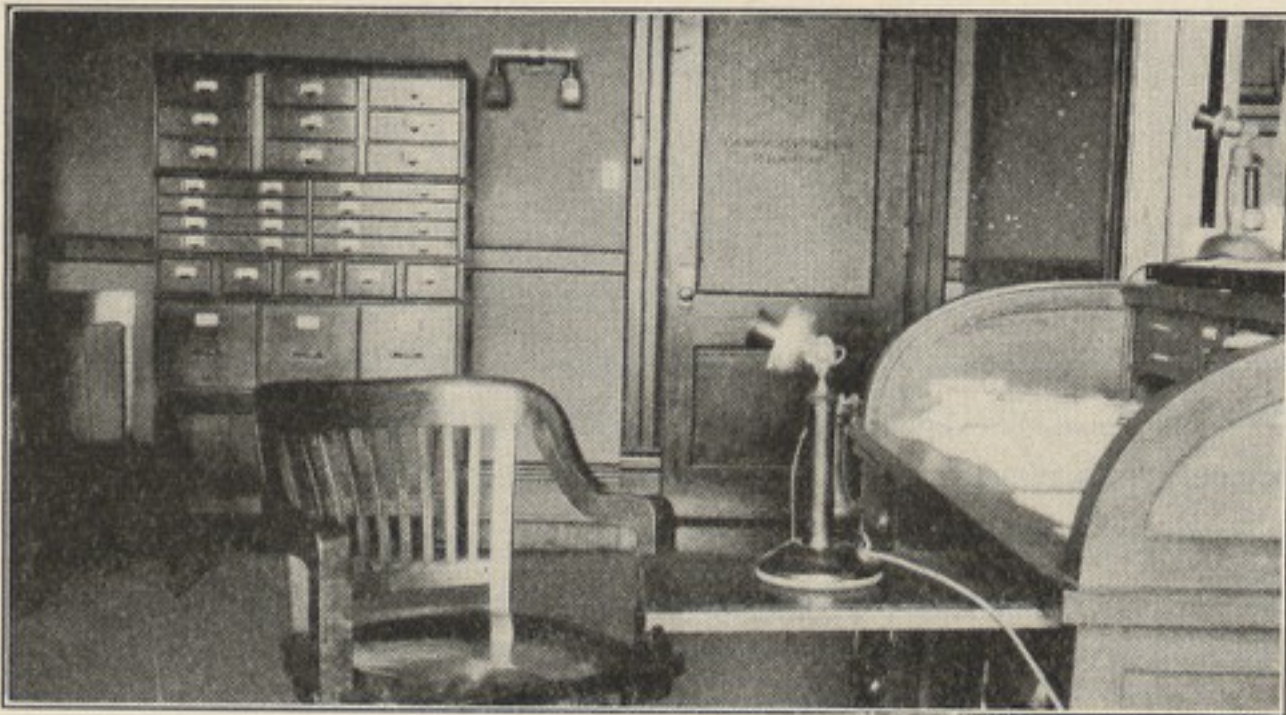
The office force is composed of able people who do their work cheerfully and for the most part efficiently. The Springfield school system is especially fortunate with respect to the character of personnel of its educational administrative offices.

As is to be expected, the board of education offices are maintained at large expense. In general this expenditure yields ample returns, for an efficient administrative office is essential to the smooth and effective working of a large school system. There are, however, some respects in which the expense could be considerably reduced without materially impairing the effectiveness of the work. In the opinion of the members of the survey staff an important economy of this character could be effected by dis-

persing with the services of the board's attorney and its bookkeeper. Both of these employees appear to be able and conscientious men. If the business of the board were of a sort to require their services, they would satisfactorily fill their positions. But the fact is that the business of such a school system



OFFICE OF THE BOARD OF EDUCATION



OFFICE OF THE SUPERINTENDENT

as that of this city is not of a nature to require the employment of an attorney and this is demonstrated by the fact that few cities, even of the largest size, find it necessary to employ them as regular members of their staffs.

The work of the bookkeeper is well done, but it is largely needless duplication of the work already done by the secretary and

clerk of the board. The present bookkeeper is employed during the day in a bank and does his work for the board in the evening. It would make for better results to discontinue the office, installing a modern system of bookkeeping and assigning the work to the secretary.

The filing and record systems are carefully and thoroughly administered. In general they are more complex than is necessary and require more work than they should. This is a general characteristic of the work of the entire office. It is not yet serious, but as the years go on and the work of the office increases in bulk and complexity, there is danger that the office system may become involved in much unnecessary red tape. This condition has not yet developed and care should be taken to see that it does not.

The way to provide for this is to challenge periodically each part of the office system and each filing or record device to find out whether or not it saves more time, labor, and money than it costs. When it does not, it should be immediately changed or abandoned. An efficient office system consists of a definite but adaptable plan of work operating through methods and devices. The object of such a system is to give each member of the force that portion of the work which he can do best, and to show accurately and quickly the significant facts about the work being done so as to substitute knowledge for guess work.

When office systems become truly efficient, they result in executive attention to the essential and elimination of the unessential. But it must always be remembered that office systems must be operated, for they do not run themselves. They are good servants but bad masters. This is why they must be periodically challenged and in the Springfield offices this should be done at once, so that those in charge may be quite certain that every piece of routine saves more time and labor than it costs and has a better cause for being than that it has always been done that way.

PURCHASE OF SUPPLIES

Few cities spend so much money per pupil as does this city on the purchase of school supplies. Despite these generous expenditures, the schools are not furnished with either an unusual amount or an especially high quality of classroom supplies. The city is spending sufficient money to secure the very best

results but it is not securing them. The reason for this condition is that the purchase of supplies is handled by a committee of the board through local dealers. No large purchases are made and hence the lowest wholesale rates are not secured. A considerable sum of money could be saved, the board members relieved of a large amount of detailed work, and supplies secured with much less delay by the establishment of a bureau of supplies as a division of the office organization of the board. This work could be efficiently handled by the present assistant secretary, who should be in charge of the purchase of supplies and their issuance on requisitions signed by the principals and approved by the superintendent.

THE ADMINISTRATION OF COMPULSORY EDUCATION

According to the state law, the compulsory attendance period is from seven to 16 years. However, when the child reaches the age of 14, he may secure an age and school certificate which permits him to leave school and go to work. This makes the effective compulsory age from seven to 14 years. For the enforcement of this law the city employs one attendance officer. Since the school census does not list the children who are of compulsory attendance age, there is no means of securing the attendance of all children. This problem will be further considered in the section devoted to the school census. Since no one knows how many children ought to be in school, or who they are or where they live, the method used for locating absentees is to ask the school children whether they know of any other children who are not in school. The principals of the schools then report such truancy cases as are brought to light and the attendance officer investigates each case, leaving, where necessary, a printed admonition from the board. If this is not sufficient to secure the attendance of the children, the case is reported to the Juvenile Court which may or may not issue a warrant for the arrest of the parent.

The attendance officer files monthly reports of his work in the office of the superintendent. These records for the past four years are not entirely complete, but so far as they are on file they show work accomplished as indicated in Table 2.

TABLE 2.—WORK OF ATTENDANCE OFFICER AS SHOWN BY MONTHLY REPORTS FOR FOUR YEARS

	1910-11 (7 months)	1911-12 (9 months)	1912-13 (10 months)	1913-14 (6 months)
Calls for pupils	203	308	306	136
Cases investigated	179	351	215	80
Notices served	172	135	108	48
Warrants or summons . . . . .	..	4	13	3
Fines suspended . . . . .	..	4	12	3

Under present conditions school attendance in this city is at best no more than mildly compulsory. Only one other city in Illinois of similar size had in 1910 so small a proportion of its children from six to 14 years of age in school. Since there is no complete official record of the children of school age, no one knows how many are now evading the law. Moreover, there appears to be little inclination on the part of the judge of the Juvenile Court to co-operate with the attendance officer. Records show that summons or warrants for parents are seldom issued and when they are and the parents are brought into court, the judge almost invariably discharges the case or at most sentences the parents to pay a fine and then suspends the sentence.

These conditions go far toward explaining why Springfield has a greater proportion of illiteracy in its native white population than any other city of over 30,000 population in Illinois and why the proportion is increasing instead of decreasing. In all probability this condition will continue until the school census is made more effective, the work of the attendance officer given a more important place in the public school system, and the co-operation of the judge of the Juvenile Court secured.

AGE AND SCHOOL CERTIFICATION

According to state law no child between the ages of 14 and 16 may leave school to go to work without securing an age and school certificate. These certificates are issued by the superintendent of schools on the request of the parent and on receipt of a certificate from the school principal showing that the child is at least 14 years of age and can read and write. The records of the superintendent's office show that from August 1, 1912, to

August 1, 1913, the number of certificates issued was 170, while from August 1, 1913, to April 1, 1914, the number issued was 216. Of these approximately one-fourth were issued to children from parochial schools, while three-fourths were issued to children coming from public schools.

About one certificate in six is issued to a girl while five in six are issued to boys. The school records indicate that approximately 600 children leave the public and private schools of Springfield each year between the ages of 14 and 16. As only about 200 receive age and school certificates, it is evident that the great majority of the children evade the law. This is largely explained by the fact that if the child leaves school but works at home instead of securing employment in a store or shop, no attempt is made to enforce the attendance law or to require the child to secure an age and school certificate. Probably most of the girls and a considerable portion of the boys who drop out of school at 14 or 15 do not secure regular employment and so do not take out age and school certificates.

The entire situation with respect to the enforcement of compulsory attendance in Springfield is in an unsatisfactory condition. This does not seem to be due to any lack of energy on the part of the attendance officer, but rather to a general indifference on the part of the entire community. Until this is remedied, it is probable that many children will remain out of school and Springfield will continue near the head of the list of Illinois cities in the matter of illiteracy in the native white population.

In order to remedy the existing conditions, at least two competent attendance officers should be employed, the taking of the school census should be completely reformed, the issuance of age and school certificates should be more carefully administered, and the co-operation of the judge of the Juvenile Court should be secured.

SUMMARY

1. The board transacts a great amount of detailed administrative work that could better be delegated to its employed executives.
2. The board's offices are exceptionally satisfactory and its office employees are efficient.
3. Economies could be effected by dispensing with the services of the attorney and the bookkeeper and the filing and record systems rendered more efficient by simplifying them.

4. It is recommended that a bureau for the purchase and distribution of supplies be organized.

5. It is recommended that the administration of compulsory attendance and the issuance of age and school certificates be reorganized by employing two competent attendance officers, and reforming the school census so as to make it tell the names and addresses of the children who ought to be in school.

CHAPTER IV

THE SCHOOL PLANT

The first impression arising from visiting all of the schools of Springfield is that the city has been most generous in providing for the education of its children. Despite the fact that the city is growing rapidly, there is a seat for every child; there are no part-time classes. The school sites are ample in size and for the most part well located. The buildings are constructed of brick, are well kept up, and in good repair. The rooms are large and few of them are overcrowded. The ceilings are high and the halls are exceptionally spacious. The policy of generosity prevails throughout.

The second impression of the visitor is that the buildings are extraordinarily uniform in plan and construction. When one has carefully studied two or three of the older and newer types, he has almost as definite an idea of the character of all of them as he has after having examined every building. One reason for this unusual uniformity is that the board of education has employed the same architect for the past 32 years.

The third impression is one which upon careful study becomes a conviction. It is that the city is getting far less than it should in return for its generous expenditures. This is not because any of its funds have been misappropriated, but rather because even its newest buildings are a quarter of a century behind the times in design.

WASTE OF SPACE IN PLANNING

The cost of a school building increases almost in proportion to its cubic contents. This means that if every foot of space is not utilized in the wisest way, expense piles up with no accompanying increase in accommodations. In the newer buildings in Springfield space is unwisely lavished on rooms that are too large and too high, corridors that are too wide and cloak rooms that are too large.

In these buildings the rooms measure 25 by 36 feet and are planned to accommodate 50 children. Now there are only three classrooms in the entire city that have as many as 50 children in average attendance and the prevailing size of class is 36. The school authorities do not plan to have 50 children in any class and it is to be hoped that they never will. Hence rooms built for 50 are not needed.

There are three prevailing heights of classrooms from floor to ceiling; these heights are $13\frac{1}{2}$, $14\frac{1}{2}$ and $15\frac{1}{2}$ feet, with a considerable proportion at or near the latter figure.

In all three dimensions, length, width, and height, these rooms are larger than is sanctioned by the best practice of modern school architecture. The light will not carry well across rooms so wide. An undue amount of fuel is required to keep them warm and an unreasonable amount of work to keep them clean. Their size renders it difficult for the children to hear and for the teacher to keep the children's interest. The children in the rear of the room have difficulty in seeing what is written on the front blackboards. Finally the size of the rooms offers constant temptation to increase the size of the classes to a point where efficient work is impossible.

These lessons have long ago been learned by other cities, as is shown by the standards they have adopted. In Boston the size of room has been fixed at 23 by 29 feet in New York at 22 by 30, in Detroit, Cleveland, and Philadelphia at 24 by 32, while St. Louis builds them 24 feet wide by $32\frac{1}{2}$ feet long. There is a growing tendency among the best architects to hold the length down to 30 feet.

Just as the rooms are too wide and too long, so they are too high. From 12 to 13 feet is ample and if the board will build future rooms of this height it will save much money.

The corridors of the newer buildings are even more prodigal of space than are the classrooms. They are 25 feet wide for most of their length in buildings having only six rooms on a floor. This means that the corridor space on a floor having six rooms is in itself almost large enough to accommodate five more classrooms of the size that is standard in New York or Boston. Every school should have ample and even generous corridors, but there can be no justification for having them so extremely large as they are in Springfield unless they are to be used as assembly rooms.

As a result of the wasteful use of space in the Springfield schools the buildings are exceedingly expensive. A comparison of the plans in use with those of the better buildings of the same size in other cities shows that the Springfield buildings are 50 per cent larger in size for the accommodation of the same number of children than are the corresponding schoolhouses in other places.

In this comparison the new Lincoln and Palmer buildings in Springfield have been compared with buildings having the same number of classrooms, auditoriums, offices, etc., in other localities. In some instances it is found that the Springfield buildings are more than 50 per cent larger for the same accommodations. This condition means the expenditure of very large sums of money without adequate returns on the investment. It applies in greater or less degree to practically the entire school plant of the city.

LIGHTING

The window area in a well constructed classroom should be equal to one-fifth of the floor area. Where special conditions

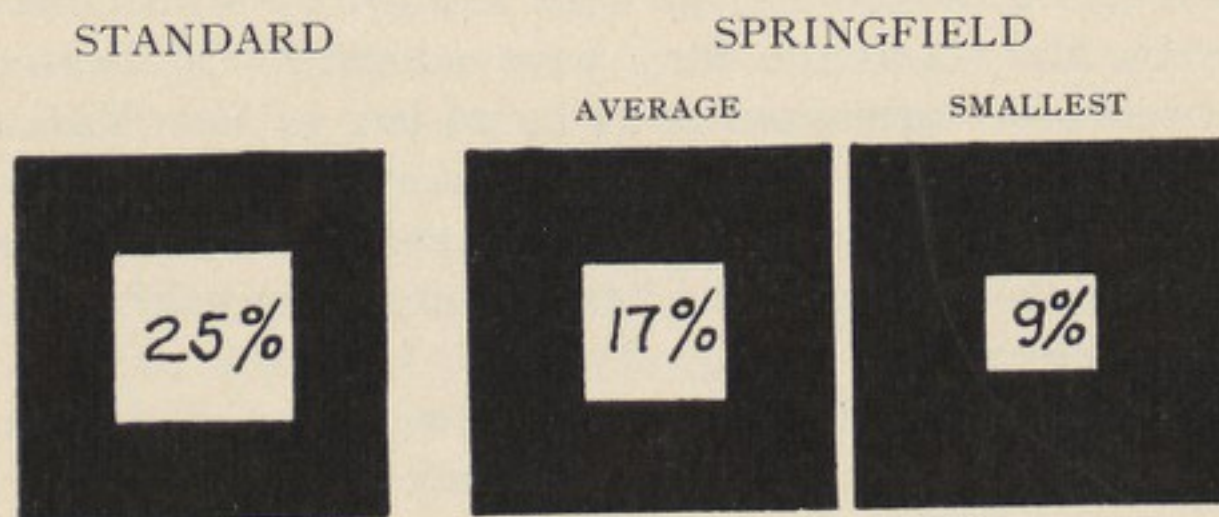


DIAGRAM 2.—WINDOW AREA SHOULD EQUAL 25 PER CENT OF FLOOR AREA AS INDICATED IN FIRST SQUARE. IN SPRINGFIELD SCHOOLS WINDOW AREA AVERAGES 17 PER CENT AND RUNS AS LOW AS NINE PER CENT IN SOME ROOMS

make lighting difficult, the window area should be increased to one-fourth of the floor area. These standards have received general recognition among the best school architects both here and abroad. In the schools of Springfield the problem of adequate lighting is rendered difficult by the prevalent coal smoke in the air which rapidly deposits a bluish film on the surface of the

window glass and seriously reduces its transparency. This condition is universal throughout the city.

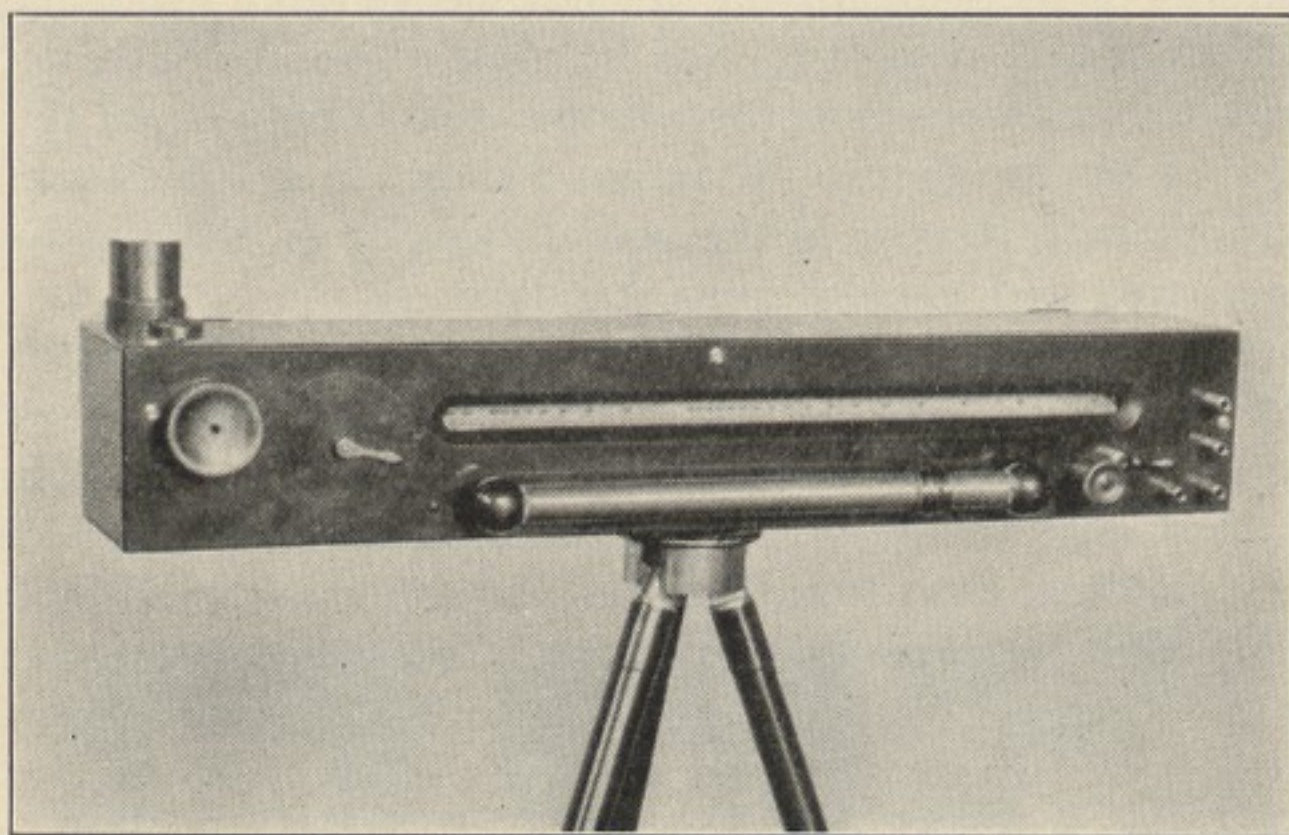
Under these conditions it would be a safe rule to follow that in no schoolroom should the window area be less than one-fifth of the floor area and that the standard requirement should call for the window area to be one-fourth of the floor area. In general the schools of the city will not meet either one of these requirements. Omitting the old Lincoln and Palmer schools which are about to be abandoned, a study of the classroom lighting of the city shows that in none of the rooms is the window area equal to one-fourth of the floor area and that in less than one in three of them is it equal to one-fifth of the floor area. In other words, two-thirds of the schoolrooms will not meet even a low standard requirement with respect to their lighting. In some of them conditions are so serious that the window area is only equal to one-twelfth of the floor area. Diagram 2 shows in graphic form the conditions with respect to the actual lighting of the classrooms as compared with the desirable standard.

But the area of the windows is by no means the only important problem of schoolroom lighting. It is just as necessary that they should be properly located as that they should be adequate in size. For any first-class building, this means that every classroom should get light from but one side and this should be from the left of the children. This is one of the most difficult problems that confronts schoolmen and health officers. Those who build schoolhouses are prone to lay the emphasis upon the æsthetic demands of appearance regardless of the rights and needs of the children. Fortunately, the best school architects are now realizing that schoolhouses are for the purpose of caring in the best way for the minds and bodies of the children rather than for the purpose of giving an opportunity for architectural display. Such architects have in scores of cities solved the problem of introducing sufficient light into each room from the proper source and in the right way and still preserving the harmony, balance, and beauty of the building.

Unfortunately, Springfield is not one of the cities in which such a solution has been reached. Of every ten classrooms in the city, seven have windows at the left and rear, one has them at the right and rear, while only two have them at the left only. Indeed, there are four classrooms in the city in which the windows are at the left and front. The result of this situation is that in

the great majority of the rooms the teacher standing at the front of the room looks directly into brightly lighted windows. To keep this up for five hours a day five days in the week is seriously trying and frequently injurious. Anyone can demonstrate this to his own satisfaction by trying it for even a few minutes.

In order to relieve the strain on their eyes, the teachers draw the shades over the windows in the rear. This in turn results in cutting off so great an amount of light that the rooms are seriously underlighted. Moreover, as the shades in use are difficult to adjust, they are frequently left drawn on cloudy days which results in still darker rooms for the children to work in.



SHARP-MILLAR PHOTOMETER, USED FOR MAKING TESTS OF CLASSROOM LIGHTING

ILLUMINATION TESTS

In order to discover the true status of the illumination in the schoolrooms, a series of careful measurements was made of the actual amount of lights at desks in rooms where classes were being held. In conducting these tests a Sharp-Millar portable photometer was used. This is the most accurate instrument available for this purpose. It measures the light in terms of foot-candles. The minimum amount of light permissible at the worst lighted desks in a schoolroom is three foot-candles, which means an amount of light equal to that which would theoretically be received from three candles at a distance of one foot.

Twenty-five tests were taken under normal schoolroom conditions. In 23 of them the classes were actually in session and in all cases the curtains were left as found when the room was visited. These tests showed that in only five cases out of the 25 was the illumination at the worst lighted desks more than the lowest allowable amount. Moreover, more than half of the tests were made on bright, sunshiny days and none of them were made on dark or rainy days. The results are shown in detail in Table 3.

TABLE 3.—RESULTS OF PHOTOMETER TESTS IN CLASSROOMS

School	Foot-candles	Room	Time of day	Weather conditions
Edwards.....	1.1	7	11:50	Cloudy
Training.....	1.2	11	3:05	Cloudy
Edwards.....	1.3	9	11:30	Cloudy
Edwards.....	1.4	6	11:40	Cloudy
McClernand.....	1.6	8	2:05	Cloudy
High.....	1.6	44	10:20	Clear
McClernand.....	2.0	7	2:15	Cloudy
McClernand.....	2.0	8	2:05	Cloudy
High.....	2.1	Domestic science	10:15	Clear
High.....	2.3	Millinery	10:00	Clear
High.....	2.4	Millinery	10:05	Clear
High.....	2.6	Physics	10:35	Clear
Harvard Park.....	2.7	5	9:30	Clear
Training.....	2.8	11	3:05	Cloudy
High.....	2.8	Stenography	11:00	Clear
High.....	2.8	S. W. 2nd Floor	10:35	Clear
High.....	2.8	41	10:30	Clear
High.....	2.9	44	10:20	Clear
Hay.....	3.0	3	11:00	Cloudy
Hay.....	3.0	5	11:05	Cloudy
Matheny.....	3.0	7	1:30	Clear
Hay.....	3.2	8	11:10	Cloudy
High.....	3.3	Cooking	10:10	Clear
Stuart.....	3.5	8	10:30	Clear
High.....	3.7	Chemistry	10:50	Clear
Stuart.....	3.8	8	10:30	Clear

This series of tests demonstrates by actual measurement the prevalence of conditions throughout the schools that are at once apparent to any experienced observer. The fact is that on any cloudy day a large proportion of all of the schoolrooms in Springfield are seriously underlighted and this condition is largely due

to the design of the school buildings. It may in some part be remedied by installing a more satisfactory type of shade than that at present in use and rigidly insisting that principals and teachers give careful attention to their adjustment.

The importance of a careful use of the shades was demonstrated by a few experiments. When measurements were taken in Room 5 at the Harvard Park School at 9:30 on a sunny morning, it was found that the illumination at the worst lighted desk was equal to 2.7 foot-candles. With the shades dropped from the top and without admitting any direct sunlight, the illumination at the same desk was increased to 10 foot-candles. In the Matheny School in Room 7 at 1:30 on a bright afternoon the illumination was 3 foot-candles with the shades as found and 6 when they were lowered. In the McClernand School a similar test in Room 7 at 2:15 on a cloudy afternoon showed that the illumination amounted to 2 foot-candles with the shades as found and 10 foot-candles at the same desks when they were lowered from the top. Another test in Room 8 in the same building on the same afternoon showed a change from 2 foot-candles with conditions as found to 6 foot-candles after the shades had been lowered from the top. Experiments conducted in an unoccupied room (Room 11) in Teachers Training School at 3 o'clock in the afternoon on a cloudy day showed 2.8 foot-candles at the worst lighted desk with the blinds completely raised but the windows somewhat dirty. By fully opening the top sashes the illumination was increased to 4.8 foot-candles, thus showing the amount of light shut out by the dirty glass and indicating the importance of keeping the windows as clean as possible.

The tests conducted at the high school demonstrate conclusively that many of the rooms are so badly lighted that they are unfit for school purposes. Under any conditions they should not be used except with artificial light. This is so obvious to any visitor to the building that it hardly needs demonstration. The classrooms in this building are lighted from the left and here the illumination is in the main adequate, but the building is so overcrowded that rooms in the basement and on the third story are being pressed into use which were never designed for classroom purposes and which can never be properly turned to such use. This building was planned by an outside architect.

Throughout almost the entire school plant the windows are wrongly located and the lighting is inadequate. Many of the

teachers complain of the eyestrain resulting from being forced to face the windows at the rear of the rooms. In their attempts to secure relief they draw the shades and so darken the rooms that the children cannot work without eyestrain. Many of the teachers have moved their desks to the side of the room so as to avoid facing the light.

These facts do not mean that the buildings should be abandoned, for the conditions can be greatly improved by the proper use of shades and the careful cleaning of the windows. They do mean that if the city is to get its money's worth in its new buildings and the eyesight of the children is to be properly safeguarded, a more modern form of building design must be followed in the future.

TEMPERATURE OF ROOMS

Most of the schoolrooms of Springfield are overheated. The temperature records taken in classrooms by the members of the survey staff were 170 in number and showed a range from 58 to 86 degrees. The maximum temperature allowed in classrooms should be about 68 degrees. More than two-thirds of all the

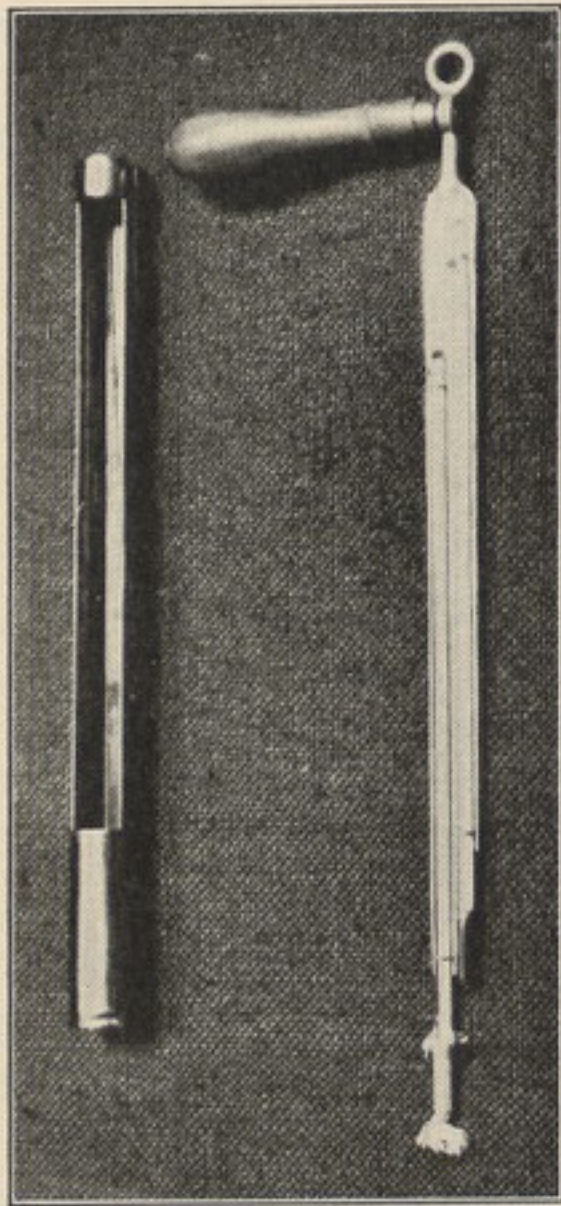
TABLE 4.—TEMPERATURE RECORDS TAKEN IN CLASSROOMS

Degrees	Number of rooms
58.....	1
60.....	2
61.....	1
62.....	4
63.....	1
64.....	3
65.....	4
66.....	11
67.....	11
68.....	13
69.....	16
70.....	20
71.....	18
72.....	24
73.....	13
74.....	13
75.....	4
76.....	7
80.....	3
86.....	1
Total.....	170

temperatures taken were above this while nearly half of them were above 70 degrees. The records taken were as shown in Table 4.

High temperatures in schoolrooms are detrimental to the health of the children and seriously reduce their working efficiency. They result in irritability and inattention and render the work of the teacher more difficult and less effective. Part of the fault in this case may be attributed to the cheap and unreliable thermometers furnished to the schools. These should

be replaced by reliable ones having conspicuous markers at 68 degrees so that the teacher may see at a glance whether the temperature is above or below that point. Such thermometers may be purchased from dealers in school supplies.



SLING PSYCHROMETER USED FOR MAKING TESTS OF HUMIDITY OF ATMOSPHERE IN CLASSROOMS

HUMIDITY

Just as the air in the classrooms in Springfield is as a rule too hot, so it is in general too dry. Careful measurements of the humidity in the rooms were made by means of a Sling Psychrometer which is the most reliable instrument for measuring the moisture content of the atmosphere.

The average moisture in outdoor atmosphere on comfortably warm days is about 70 per cent. One hundred per cent is the point at which precipitation begins as is the case in a heavy fog or light mist.

The humidity during warm days in the driest deserts of Sahara or Arizona is about 20 per cent. The proper humidity in schoolrooms is about 50 per cent with a range from 40 to 60 per cent.

In the series of 47 tests in the Springfield classrooms, the range was from 19 to 46 per cent, showing that in general the air is too dry. Of these humidity measurements, the four above 40 per cent were taken in the Edwards School which has artificial humidifying apparatus. The results of the tests are shown in Table 5.

TABLE 5.—PERCENTAGES OF HUMIDITY AS SHOWN BY PSYCHROMETER TESTS

Per cent of humidity	Number of rooms
19.....	1
22.....	2
23.....	3
24.....	3
25.....	6
26.....	3
27.....	2
28.....	1
29.....	2
30.....	1
31.....	1
32.....	4
33.....	4
34.....	1
35.....	3
36.....	3
38.....	1
40.....	2
42.....	1
43.....	1
45.....	1
46.....	1
Total.....	47

VENTILATION

With the exception of the High, Edwards and Pryor buildings, the schools are ventilated by the gravity system. The rooms are heated by steam radiators and ventilated by ducts and flues through which a current of air is induced to rise by warming it by means of steam coils. In general this system is unreliable. Where it is well installed and in good order it works well during cold weather when there is a large difference between indoor and outdoor temperature. When the weather is mild, proper suction cannot be created and the system loses its working efficiency. It is badly affected by high winds.

In Springfield the system is working well in some buildings, moderately in others, and little, if at all, in the rest. In general the janitors have not been taught to regulate it so as to secure the best efficiency. In a number of the buildings the outdoor inlets are kept shut; in others the air is sucked out of the basements and toilet rooms instead of coming from outside, and in a

considerable proportion of the buildings some part of the equipment has been left uncompleted or is out of order so that the ventilating system works only partially.

In the High and Edwards Schools systems of mechanical ventilation with fans have been introduced. The one in the Edwards School is an efficient system and works satisfactorily. That in the high school is somewhat defective. If these systems are properly installed, they are more satisfactory than the gravity systems. They make possible the use of artificial humidification which in turn renders comfortable a distinctly lower schoolroom temperature than when the rooms are overheated with dry air. Moreover with mechanical ventilation air washers may be introduced to cleanse the air from dust and soot before passing it into the schoolroom. A modern type of mechanical ventilation should be a feature of each large new building.

DRINKING WATER

Throughout the schools bubbling fountains have been introduced. These are a distinct advance over the dangerous and unhygienic common drinking cup and the board deserves credit for having installed them. Unfortunately in a number of the buildings the drinking fountains have been installed in the toilet rooms. This is a bad practice. There is no good reason for placing the drinking fountains in the toilet rooms and every argument of hygiene, convenience and school management is opposed to it. Their installation in the corridors involves little additional expense and should be insisted upon in future buildings.

JANITOR WORK

As a rule the housekeeping of the Springfield schools is well done. Most of the buildings are neat and clean. They are free from defacing marks, no paper is allowed to be thrown about in the yards, and the basements of buildings are kept clean and in good order. These conditions prevail throughout the elementary schools which are in all of these respects distinctly superior to the high school.

CLEANING OF WINDOWS

Reference has been made in the section on lighting to the importance of keeping the windows of classrooms as clean as pos-

sible. This is especially important in Springfield, where the prevailing soft coal smoke deposits a bluish film on the window glass. This film forms so rapidly that in three or four weeks it may reduce by one-half the transparency of the windows. At present practice varies greatly in the different buildings with respect to the cleaning of the windows. In some buildings the windows are washed twice a year while in others they are washed twice a month or 20 times a year. This matter is so important that standard rules for cleaning windows should be adopted and the janitors required to observe them.

CARE OF FLOORS

In general the floors of the schools are well cared for. The common practice is to oil them once or twice a year and to use a dust-absorbing compound for daily sweeping. In most cases both the oiling and the sweeping are well and faithfully done. Some of the principals have objected to the oiling and in their schools the floors are washed once or twice a month but are not oiled. Oiling the floors gives satisfactory results if it is well done. Probably all of the principals would find it quite satisfactory if care were taken to apply a very thin coating of oil twice a year and to make the application only when the rooms will not be used for several days, as for example during the summer vacation and the Christmas recess. Floors so treated do not need to be scrubbed as frequently as most of them are in Springfield.

FURNITURE

Throughout the city non-adjustable seats and desks are in use. These would be satisfactory if care were always taken to place in each room one row of smaller seats and desks and another row of larger ones so as to accommodate the exceptionally small and large children. Springfield would do well to purchase the new movable combination seats and desks for some of the rooms in its new buildings and in the older buildings that do not have auditoriums. The use of these desks makes it possible to rearrange the seating of any room in a few minutes or to move out the seats temporarily so that the room may be used for any special purpose.

BLACKBOARDS

The city is to be congratulated on having installed slate blackboards of a good quality almost throughout its school plant. All of the newer buildings are so equipped. Slate blackboards are far more satisfactory than any of the plaster or composition boards and should form part of the equipment of every first-class building.

Unfortunately the location of blackboards in the classrooms does not show the same intelligent consideration as the choice of their quality. Blackboards for little children in primary rooms should be placed low so that the children can write on them readily. The standard distance from the floor in primary grades should be 26 inches. In grammar grades and high schools the standard height should be 30 inches. In the Spring-



THE TWO BOYS SIT IN SEATS OF THE SAME SIZE. THE COAT HOOKS AND BLACKBOARDS ARE TOO HIGH FOR THESE SMALL CHILDREN. THE SCHOOLS ARE FOR THE CHILDREN; THEY SHOULD BE ADAPTED TO THEIR USE

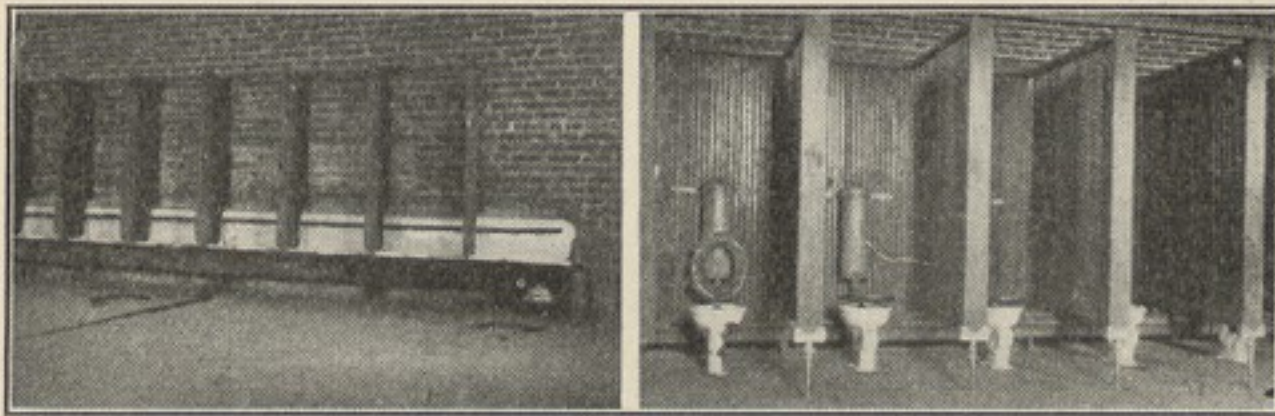
field buildings practically all of the boards are installed as though they were to be used for high school children even when the rooms have been designed for the use of primary grades. In this respect, as in many others, the city has been paying for the best but securing unsatisfactory results. The average distance from the floor to the blackboards in every grade in the city from the first to the fifth, inclusive, is 30 inches while the average in the sixth, seventh, and eighth grade is 31 inches. There is one primary grade in which the blackboards are 38 inches from the floor, a second and two third grades in which the distance is 36 inches,

and two fourth grades in which it is 37 inches. In a third of all the schoolrooms in the city the distance is over 30 inches.

TOILETS

Throughout the schools the toilet facilities are seriously deficient. Standard practice, founded on the experience of many cities, demands that in elementary schools there shall be one seat for each 15 girls and one seat and one urinal for each 25 boys. Only four schools in the city meet these requirements. In the rest the facilities are inadequate and in the Stuart and High School buildings seriously so.

In nearly all of the buildings the toilet stalls have no doors. This is a thoroughly bad practice and should be remedied. No citizen of Springfield would tolerate such an arrangement in his home and there is no reason why his children should be sub-



THE URINALS ARE OF POOR DESIGN AND THE TOILET STALLS SHOULD HAVE DOORS

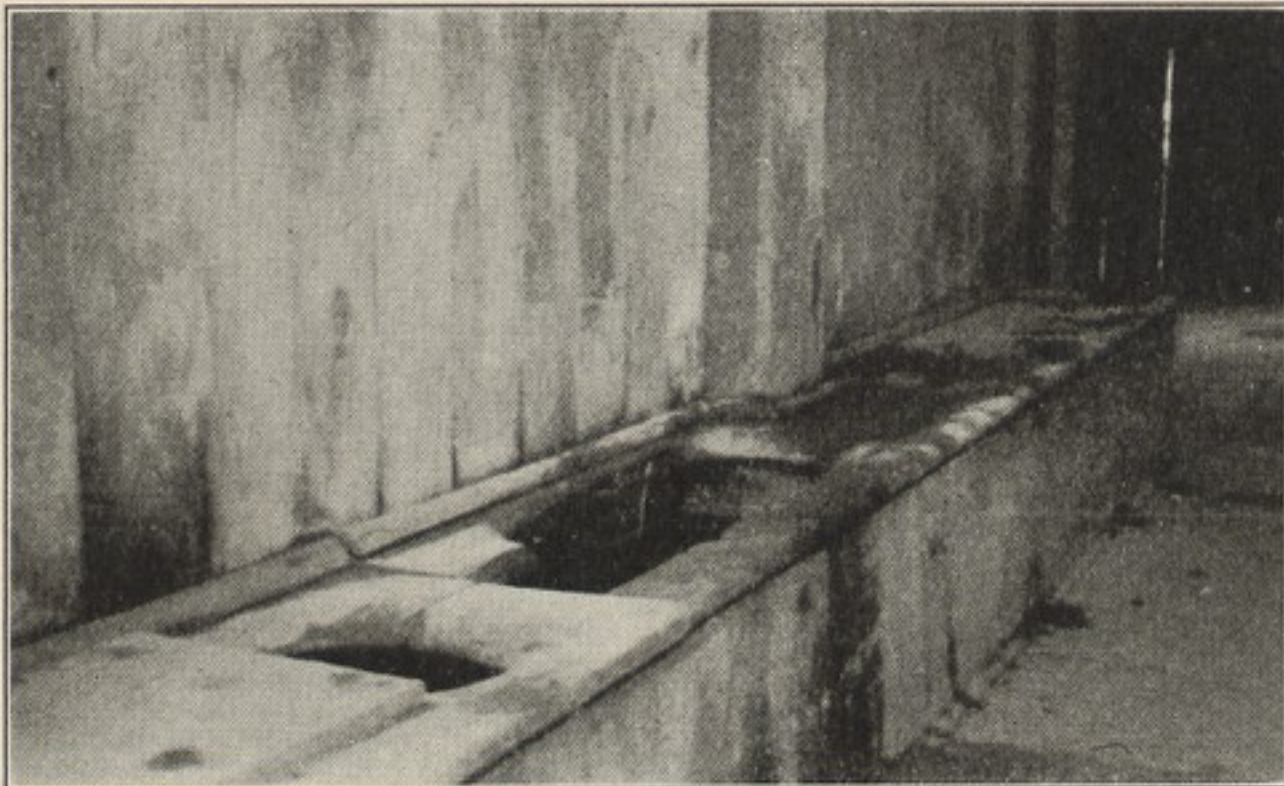
jected to it in school. Each toilet stall should be provided with a short door set well above the floor and arranged with spring hinges so that it will swing in when the stall is not in use. This will afford privacy and facilitate sanitation and inspection.

In many of the buildings the toilets have been placed in a double row down the middle of the room. It is a much better plan to place them in a single row against the wall. This allows for a far lighter room and one more easily cleaned and supervised. In some of the buildings no toilets have been provided for the teachers.

The urinals in use are made of enamelled iron and are poorly designed. They suffer rapid corrosion and many are in bad condition. Slate or glass urinals of the self-ventilating type should be used for renewals and in all new buildings. The floors of the toilet rooms are of cement which is objectionable because the

uric acid coming in contact with it begins a chemical action which can never be corrected. The best material for such floors is rock asphalt which is entirely non-absorbent and more easily cleaned than any other flooring.

All of the toilets in use are of the same size whether provided for primary children or for the high school. This should be corrected by supplying two sizes of seats in all new buildings. In the Ridgely School the outdoor privies are in a serious condition of dilapidation which should not be tolerated. Throughout the elementary schools the toilet rooms are entirely free from the obscene writing which commonly defaces these places. In this respect they are in better condition than any equal number that



THE PRIVIES OF THE RIDGELY SCHOOL ARE IN SERIOUSLY BAD CONDITION

have come under the observation of the members of the survey staff. This speaks well for the moral atmosphere of the schools. Unfortunately conditions in this respect in the High School in the toilets of both the boys and the girls are seriously bad.

FIRE PROTECTION

Springfield is fortunate in never having had a fire tragedy in her schools. Some of the buildings have been damaged by fire but no lives have been lost. Just six years ago, in March, 1908, fire started in the Lakeview School in Collinwood, Ohio, probably from a steam pipe resting on a wooden joist. The teachers

sounded the fire-drill signal and the children on the first floor escaped. On the upper floors the teachers stood at the classroom doors but the coat rooms opened directly into the corridors just as they do in Springfield and the children escaped through them in a rush for the stairs. Coat rooms ought not to open into corridors. At the foot of the stairs the doors were double and swung outwards. One side was bolted. In every elementary school building in Springfield one side of the outer double door is kept bolted. The children trying to get out became wedged



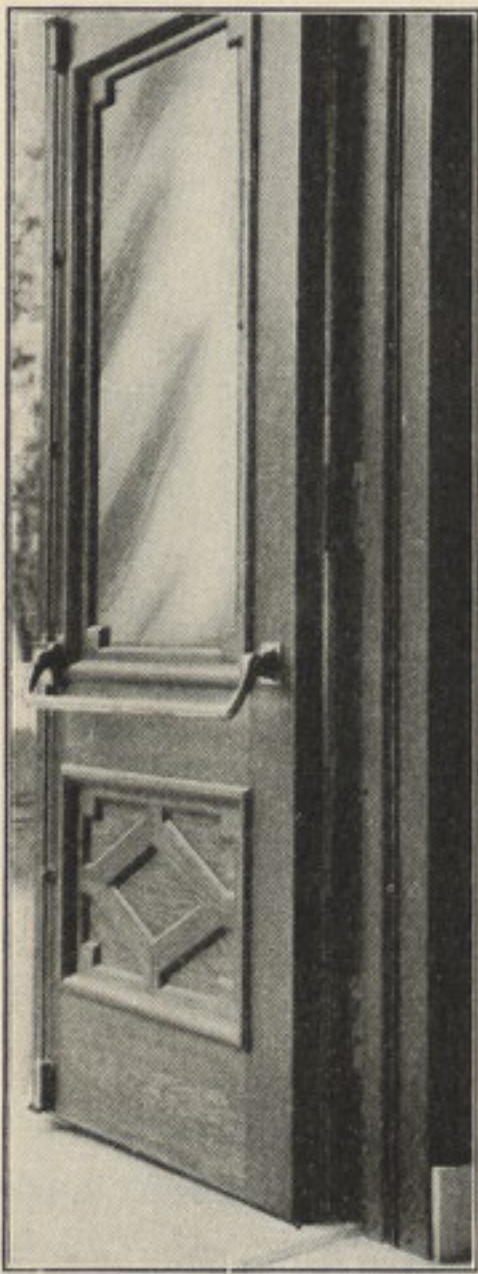
THE COLLINWOOD SCHOOL, WHERE 173 CHILDREN LOST THEIR LIVES

against the vestibule partition. Before they could be extricated 173 children and two teachers burned to death within sight and in some cases within touch of their friends and parents.

The building was of brick with wooden floors and partitions as are the Springfield buildings. The furnace room was not fire-proof and the stairs were open and of wood just as they are in this city. The building was well provided with good fire escapes as none of the Springfield buildings are and it was better planned than most of the schools here. Conditions in Springfield make possible the duplication of the Collinwood tragedy at any time.

Of all the factors entering into this situation the most seriously important is the bolted outside doors. The members of the sur-

vey staff witnessed fire-drills in most of the schools. They are conducted in substantially the same way in all of the elementary schools. When the signal is sounded some of the older boys make a rush for the doors and unbolt them. This introduces at the outset an element of running and confusion into a drill which is instituted for the purpose of preventing panic. In some cases the boys are able to undo the bolts and sometimes they are not. In one instance they could not get the door open until the janitor came to help them; in another a teacher's aid was required. In one school the chain for drawing the bolt is broken and a stick



SCHOOL DOOR EQUIPPED
WITH PANIC BOLT

is kept inside the door to serve instead. In one school the principal, upon being asked to sound the fire signal ran upstairs to find the janitor to get him to come down and unbolt the door so that the fire-drill might be held. In one minute and thirty seconds the janitor got the door unbolted and in two minutes and twenty seconds the children had marched out. The times were taken by an accurate stop-watch.

The first step to be taken in remedying this situation is to replace the bolts on all outside doors by panic bolts by which doors can be instantly opened from the inside by a slight pressure on any part of the bar. Fastening any outer door in any other way should be peremptorily forbidden.

The fire drills should be reorganized and all running forbidden. In buildings of the Hay and Feitshans type the turns at the bottom of the stairs should be straightened out and the doors placed directly in front of the stairs

instead of at one side. In many of the buildings the ceilings over the furnaces are of wooden lath and in some cases of unprotected wooden beams and flooring. These should be replaced or protected with metal lathing and cement plaster.

NEW AUDITORIUMS FOR OLD BUILDINGS

There is at present an active campaign throughout the city for the addition of an auditorium to each school building not already possessing one. This movement is stimulated by the recently aroused interest in the use of school buildings for public gatherings, meetings of parents' associations, entertainments, and the like. The interest is so great that the different school districts are actively vying with each other in the race to be the first to secure auditoriums as annexes for their buildings.

There is much that is commendable in this movement. An auditorium is an essential part of every well-equipped and modern school building. Unfortunately, however, the present policy is seriously expensive and somewhat short-sighted. Most of the buildings should be replaced within the next 25 years and some of them in even less time. The present plan is to build expensive auditoriums in the yards and connect them with the school buildings by means of covered passageways.

If the city is to get the value of its money, each of these new additions should be carefully planned and substantially built so that it will be an integral part of the modern building which will within a few years displace the present one. At present no such careful thought is being devoted to the planning of the auditoriums and when the time comes for the replacement of the school buildings, it will be found that the auditoriums are unsatisfactory as separate units and cannot readily be made parts of the new buildings because they have not been planned with that end in view. The present policy is an extravagant one and should not be followed unless the city feels that it has no other more pressing uses for its funds.

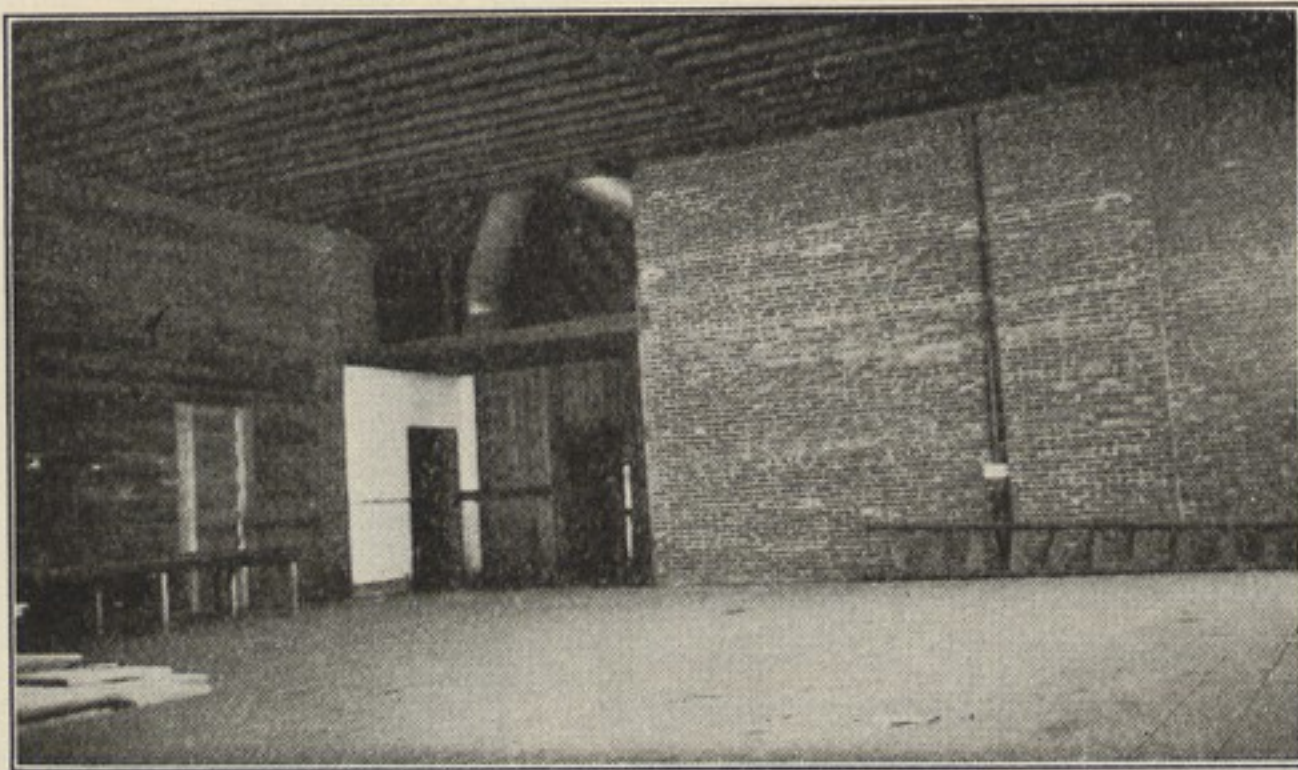
At the same time that many thousands of dollars are being ap-



STAIRWAY OF DANGEROUS TYPE
FOUND IN FEITSHANS SCHOOL

propriated for the building of new auditoriums, the Bunn School has an unfinished auditorium which was built as a part of the original building but has never been completed and hence represents a large expenditure of an almost entirely unproductive sort.

Many of the present schools have very wide corridors which could be used fairly satisfactorily for public meetings by the installation of folding chairs which could be stored in the basement when not in use. Similarly, if two or three of the upper grade rooms were equipped with movable furniture, meetings of parents' clubs could readily be held in them. These make-shifts would not be so gratifying to local pride as the building of



UNFINISHED AUDITORIUM IN THE BUNN SCHOOL ERECTED 12 YEARS AGO

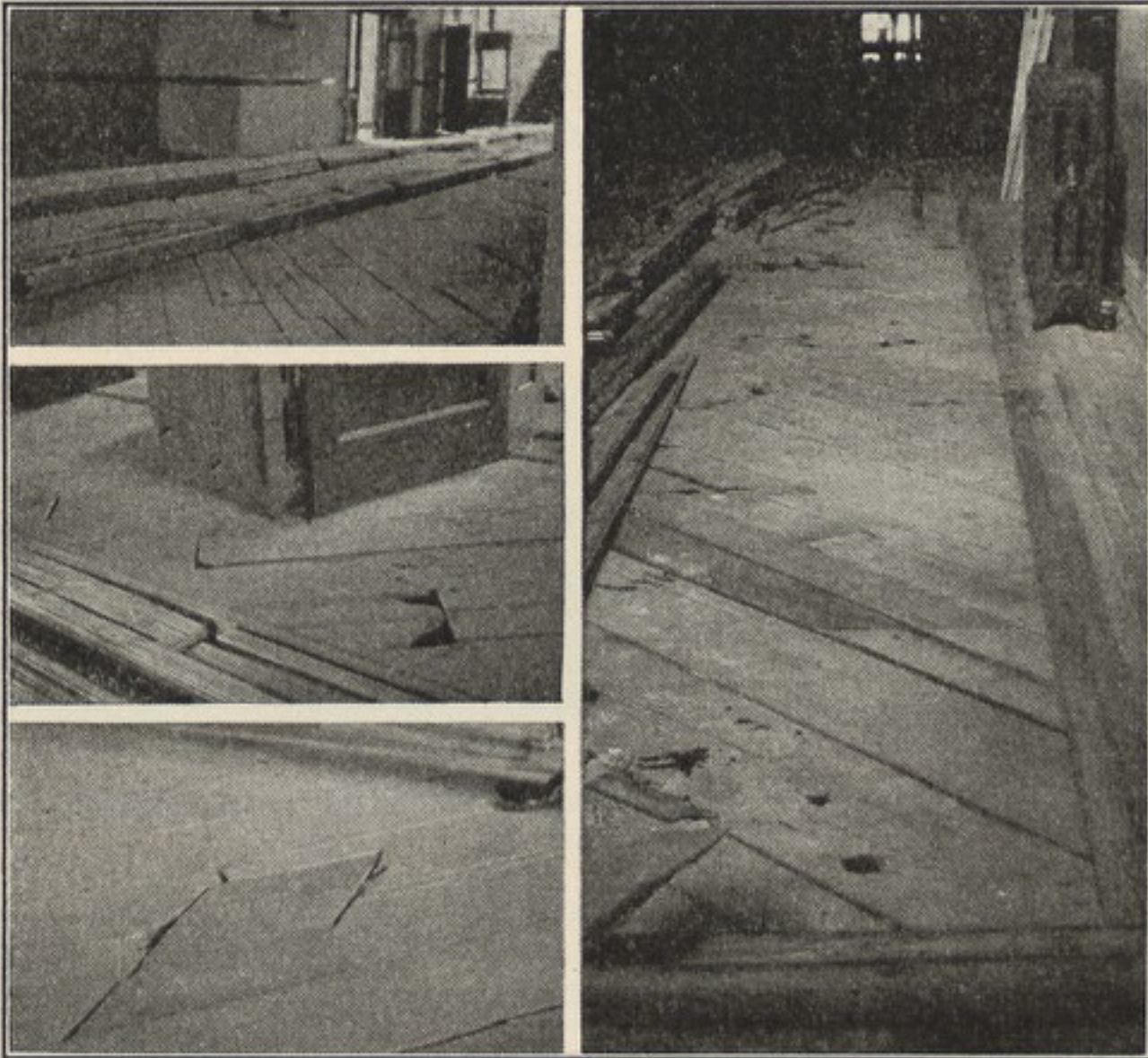
auditoriums, but they could be worked out so as to give almost equally satisfactory results in terms of the wider use of the school plant and such an arrangement would set free many thousands of dollars for use in much needed new buildings.

QUALITY OF CONSTRUCTION

In quality of material and workmanship there is the widest variation among the buildings of the city. Some of them, as for example the Edwards and the Lawrence Schools, represent a thoroughly high grade of construction. In others the material is inferior and the workmanship poor. As the plans and specifications for all of the buildings are substantially the same, these striking contrasts seem to be attributable to the methods of the

builders who have constructed the different schools. The poor material and workmanship found in some of the buildings are inexcusable and illustrate once more the fact that the city is not getting its money's worth in its school buildings.

A striking example of this is furnished by the new Lincoln School. When the members of the survey staff began work, the carpenters were just putting down the flooring in that building. The specifications called for sheathing or underflooring of dressed,

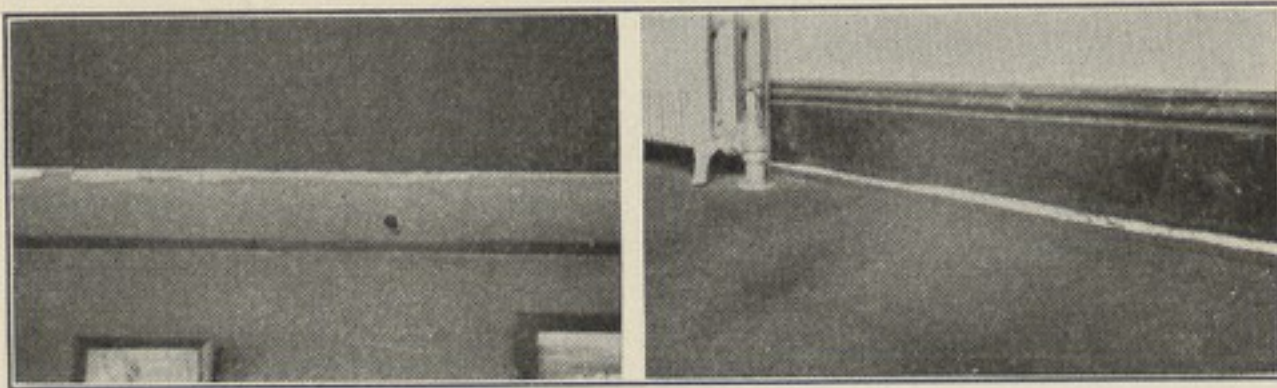


PATCHED, CRACKED, AND DEFECTIVE SECOND-HAND LUMBER USED AS SHEATHING IN THE NEW LINCOLN SCHOOL

seasoned yellow pine $\frac{7}{8}$ inch thick. In actual fact the sheathing of the Lincoln building consists of old second-hand lumber full of nail holes, broken pieces, and with some decayed spots. Most of it is spruce, but there are short pieces used for patching that are white pine, hemlock, yellow pine, and maple. This second-hand lumber is of varying thickness and has been leveled up by inserting thin boards, pieces of shingle, chips, and sticks between the joists and the thinner pieces. It is impossible to lay a truly

smooth floor over such a foundation as one may see by visiting the Lincoln or the Palmer Schools. The floors in both of these new and expensive buildings are uneven and springy. Anyone looking down the halls can see the unevenness and by walking about can feel the floor boards spring beneath his feet. On page 41 will be found photographs of the sheathing in the Lincoln building showing the broken spots and patches of the second-hand lumber used.

Moreover throughout both of these buildings similar evidences of poor material and deficient workmanship are to be found. Neither building will remain in good condition many years and both of them are sure to entail heavy bills for repairs before they have been long in use. Similar evidences of poor construction were found in some of the other buildings. On this page are shown photographs illustrating the way in which floors and ceilings are



CEILING PULLING AWAY FROM WALL IN BUNN SCHOOL AND FLOOR SAGGING IN MATHENY SCHOOL

pulling away from walls in the Matheny and the Bunn buildings, both of which are comparatively new.

SPECIFICATIONS

The causes of these conditions lie in the way in which the specifications of the new buildings are drawn and the inspectorial work done. The specifications of the Lincoln building have been submitted to one of the foremost schoolhouse architects in America for his opinion. His verdict is as follows:

"The specifications are of a generation long past, loose in the extreme and lacking in nearly all the points of a proper specification as written today. There is nothing in these specifications that would indicate second-hand lumber and an inspector who would allow such to be used should be subject to inquiry as the legal intent of a specification for a new building is that new ma-

terial is to be used unless there is a distinct understanding to the contrary."

RECOMMENDATIONS REGARDING THE SCHOOL PLANT

1. Build no more buildings according to the plans now in use. Profit by the experience of other cities and secure plans embodying the most modern practice.

2. Build future classrooms smaller. Make ceilings lower. Plan coat rooms somewhat narrower.

3. Reduce width of corridors from 25 feet to about half that width.

4. Insist on lighting of classrooms from the left only.

5. Have the window area in classrooms equal to one-fourth of the floor area.

6. Secure a better type of window shades and insist on constant care in their adjustment.

7. Establish standards for the cleaning of windows and insist on their observance.

8. Reduce classroom temperatures to a maximum of 68 degrees and equip all rooms with reliable thermometers.

9. Equip new buildings with the best type of mechanical ventilation and repair defects in existing systems.

10. Place some seats and desks of varying sizes in each room. Equip some rooms in each building with the new movable combined seats and desks.

11. Install drinking fountains elsewhere than in the toilet rooms.

12. Arrange blackboards in classrooms, hooks in coat rooms, and seats in toilet rooms with reference to the size of the children who are to use them.

13. Build new schools fire-proof or fire-resisting. Straighten winding stairways in old buildings or, better still, replace one stairway in each old building by fire-proof stairs.

14. Immediately replace all bolts on outer doors by panic-bolts and forbid the fastening of any outer doors by any other means.

15. Reorganize fire-drills, forbidding all running and confusion.

16. Plan all auditoriums built as annexes of old buildings so that they will be integral parts of the new buildings to be erected in the future. Where this is impossible, do not build them.

17. Secure new sets of specifications and reorganize the system of inspection so that specifications will be followed in new buildings.

18. Organize a school for janitors under the direction of the superintendent of buildings in which they may learn the best and most efficient methods of carrying on their very important part of the school work.

CHAPTER V

THE CHILDREN

According to the school census of 1912, there were in the school district 15,387 children of school age. This means those at least six but less than 21 years old. Since we have no more recent figures, we may use these as being approximately true for the spring of 1914. We may compute from the data in the United States Census how many of these children were of each separate age. There are now three facts which we need to know about the children of each age in order to discover how well the schools of the city are fulfilling their duty of educating all the children. These three facts are: First, the number of children of each age who are in public schools; second, the number in private or parochial schools; and third, the number not in any school.

Since the school census in this city does not gather these data, the survey has attempted to secure them. The results are presented in graphic form in Diagram 3. Each upright column represents the number of children in the city of the age indicated. The lower portion in outline shows the number attending public school in March, 1914, the shaded portion shows the number attending parochial and private schools, and the portion in black shows those not attending any school.

The first noticeable feature of the diagram is that there are more children at each upper age than at the lower ones. This is because the city is growing rapidly through accessions of young people from other localities. The next condition prominently brought out is that during the compulsory attendance period, at the ages from seven to 13 inclusive, practically all the children appear to be in school. If this is true, it is a good showing and distinctly creditable to the city. It does not, however, agree with the returns of the United States Census of 1910 which showed a low proportion of children of compulsory attendance age in school.

The diagram also shows that as soon as children complete the compulsory attendance period they begin to drop out rapidly.

By the time they are sixteen, more than half have left and two years later very few remain. During the compulsory attendance ages the enrollment in public schools is more than two and a half times as great as it is in the private schools, but during the upper ages the private schools actually enroll more children than the public ones. This is largely accounted for by the large num-

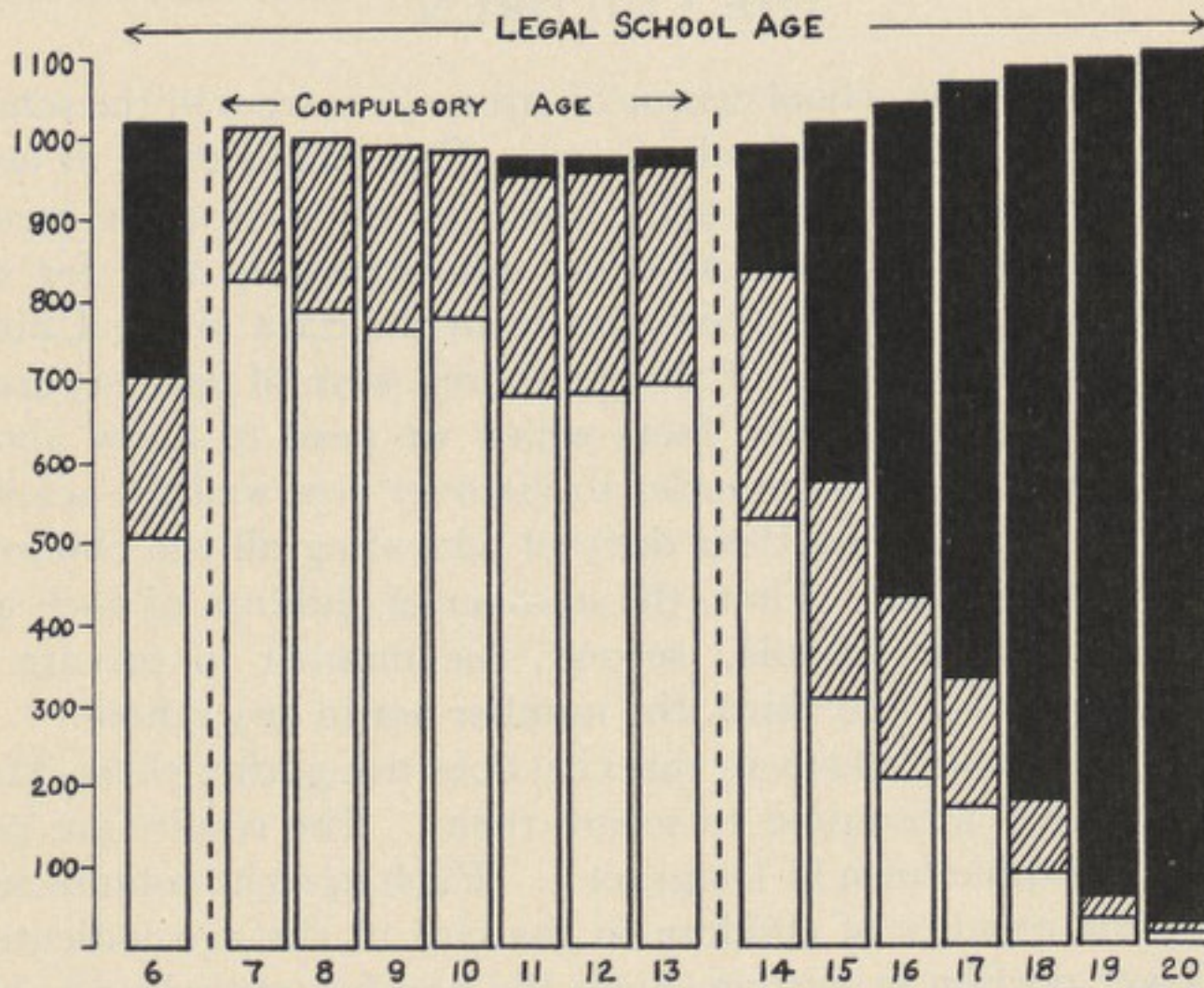


DIAGRAM 3.—THE COLUMNS REPRESENT ALL THE CHILDREN OF THE SCHOOL DISTRICT AT EACH AGE FROM SIX TO 20. PORTION IN OUTLINE REPRESENTS CHILDREN IN PUBLIC SCHOOLS, SHADED PORTION THOSE IN PAROCHIAL AND PRIVATE SCHOOLS, AND PORTION IN BLACK THOSE IN NO SCHOOL

bers of Springfield children who attend the local business colleges.

SCHOOL CENSUS

The conditions just discussed and the diagram illustrating them represent the facts which are fundamental to the enforcement of any system of compulsory education. The criticism that may fairly be brought against the data presented is that we are not certain of their accuracy. This ought not to be the case. Springfield should know, not guess or compute, the number of children at each age who are in public schools, in private schools, or not in any schools. According to law the school census must be taken every two years but at present it is of almost no value because it does not gather the simple but most valuable data

mentioned above. This can be remedied at little expense in the future.

GRADES

The children in the public schools are classified in 12 grades of which the first eight constitute the elementary schools and the last four the high school. If we omit children from out of town in the high school, the attendance in each grade in March was as shown in Table 6 and illustrated in Diagram 4, in which each upright column represents the children in one grade.

Both the table and the diagram show large numbers of children in the lower grades and small numbers in the upper ones. The two lowest grades are more than six times as large as the two highest ones.

TABLE 6.—PUPILS IN AVERAGE ATTENDANCE BY GRADES

Grade	Pupils
I.....	855
2.....	922
3.....	993
4.....	871
5.....	850
6.....	688
7.....	593
8.....	427
I.....	307
II.....	239
III.....	143
IV.....	142
Total.....	7,030

There are many factors responsible for such conditions. Children enter school at varying ages and make different rates of progress. Some complete a grade each year and some even skip grades. Others take two or even three years to complete the work of one grade. When many children repeat grades the membership of the lowest grades becomes greatly increased. If such children spend several years in repeating lower grades they reach the conclusion of the compulsory attendance period and drop out before entering the higher grades. This results in greatly decreased classes at the upper end of the course. These conditions maintain in Springfield as they do to a greater or less

extent in all school systems. They produce some of the most difficult problems of school administration.

CHILDREN WHO ARE MISFITS

A majority of the children begin school at the age of six and so the first grades are largely made up of six-year-old children. If a child enters at the age of eight or nine or if he enters earlier but remains two or three years in the first grade, he is nearly certain to become a misfit in his class. He needs a different kind of teaching and a different sort of treatment from the other chil-

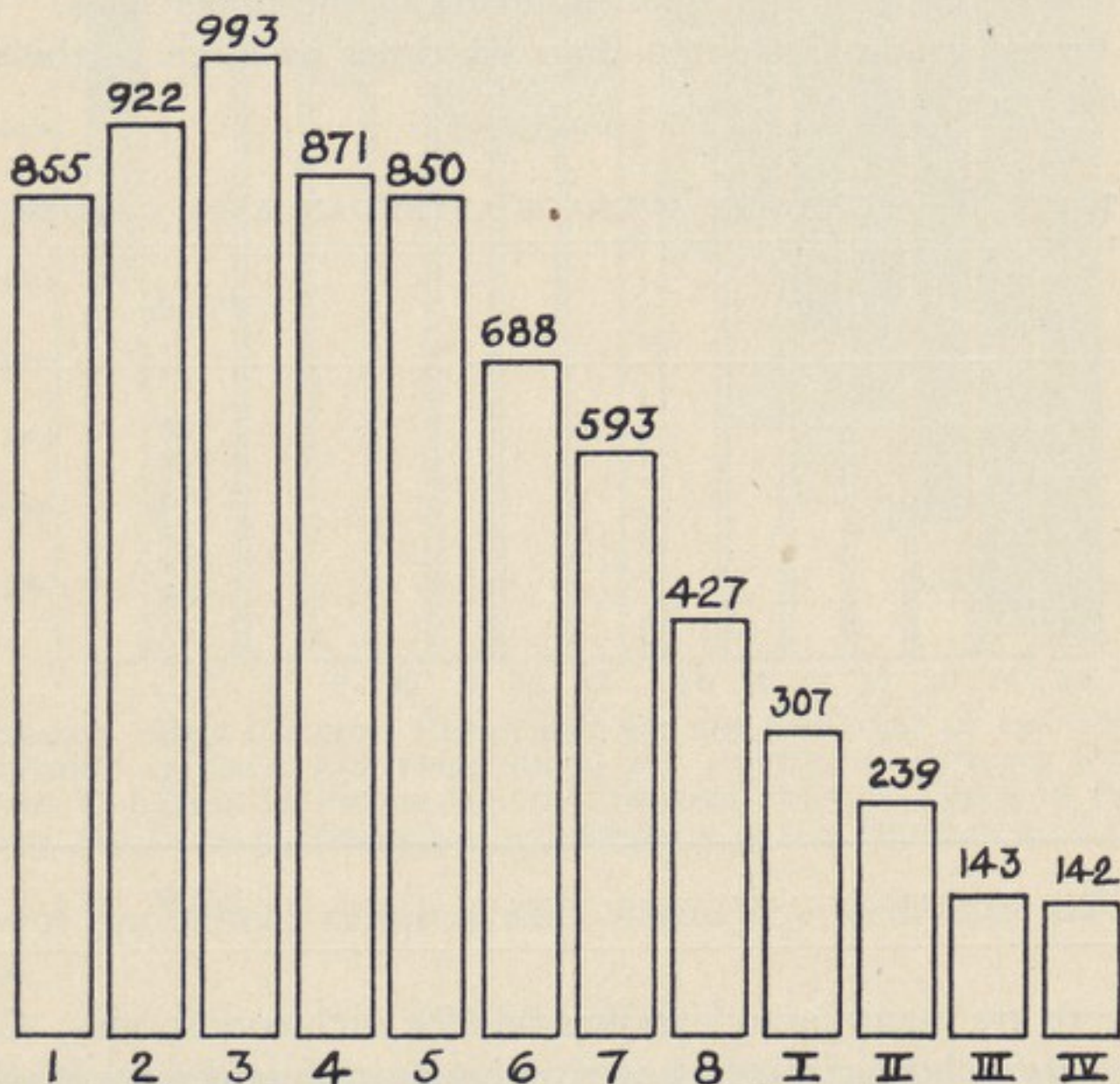


DIAGRAM 4.—THE COLUMNS REPRESENT THE MEMBERSHIP IN THE EIGHT GRADES AND FOUR HIGH SCHOOL CLASSES. NOTE THE RAPID FALLING OFF IN THE UPPER GRADES

dren and his presence renders the teacher's work harder and its results poorer. Such a child is termed an over-age child and he is classified as over-age if he is eight or more years old in the first grade, nine or over in the second, and so on for the other grades.

There are 1,469 such over-age children in the elementary schools of Springfield which is 24 per cent of the average attend-

ance. As compared with other cities, this is a distinctly good showing. Three years ago the Division of Education of the Russell Sage Foundation gathered similar data from 29 other cities, using the same methods and blanks as were used in Springfield.* Only one of the 29 cities had a smaller percentage of over-age children. In this matter the schools of Springfield stand well.

Of the 1,469 over-age children there are 235 more boys than girls. Only 21 per cent of the girls are in this group as against 27 per cent of the boys. As both boys and girls enter at the same ages, this indicates that the boys make slower progress.

CHILDREN WHO MAKE SLOW PROGRESS

The theory on which the school grades are organized is that the children shall complete one grade each year and so finish the eight elementary grades in eight years. If a pupil has taken three years to complete two grades or seven years to finish five grades, we may classify him as making slow progress.

On this basis there are 1,502 pupils in the Springfield schools who have made slow progress. As in the case of the over-age pupils, this is 24 per cent of all. The number of slow boys is 266 greater than the number of slow girls. As in the former comparison, we find that the percentage of boys making slow progress is greater than that among the girls. For the boys it is 28 while among the girls it is only 21.

As contrasted with the 29 other cities for which similar data are available, Springfield again makes a fine showing, only two of the others making better records with respect to the percentage of pupils making slow progress. From this comparison and the foregoing one, showing conditions with respect to over-age children, it appears that Springfield is doing very creditably in the matter of carrying her children through the grades on schedule time but that her boys are not faring as well as her girls.

The comparative records of Springfield and the 29 other cities in the matters of over-age and slow pupils are shown in Table 7.

CHILDREN BOTH OVER-AGE AND SLOW

The children who are over-age and the children who are slow are not by any means always the same children, but when a child

* The Identification of the Misfit Child. Publication No. 108. Division of Education, Russell Sage Foundation, New York City.

TABLE 7.—PER CENT OF ELEMENTARY SCHOOL PUPILS OVER-AGE AND SLOW IN 30 CITIES. DATA FOR SPRINGFIELD, ILL., FOR MARCH, 1914, AND FOR OTHER CITIES FOR JUNE, 1911

City	Per cent over-age	City	Per cent slow
1. Quincy, Mass.....	19	1. Amsterdam, N. Y.....	21
2. Springfield, Ill.	24	2. Milwaukee, Wis.	22
3. Racine, Wis.....	28	3. Springfield, Ill.	24
4. Amsterdam, N. Y.	28	4. Indianapolis, Ind.	25
5. Indianapolis, Ind.....	29	5. Racine, Wis.....	28
6. Syracuse, N. Y.....	29	6. Rockford, Ill.....	29
7. Danbury, Ct.....	31	7. New Rochelle, N. Y.	30
8. Milwaukee, Wis.....	31	8. Danbury, Ct.....	31
9. Rockford, Ill.....	32	9. Muskegon, Mich.....	31
10. Canton, O.....	34	10. Topeka, Kans.....	31
11. Elmira, N. Y.....	34	11. Niagara Falls, N. Y.	34
12. New Rochelle, N. Y.....	34	12. Bayonne, N. J.....	35
13. Muskegon, Mich.	35	13. New Orleans, La. (white)	36
14. Niagara Falls, N. Y.....	36	14. East St. Louis, Ill.	37
15. Topeka, Kans.....	36	15. Elmira, N. Y.....	37
16. Danville, Ill.....	38	16. Danville, Ill.....	38
17. Trenton, N. J.....	38	17. Passaic, N. J.....	38
18. Reading, Pa.....	40	18. Plainfield, N. J.....	38
19. Plainfield, N. J.....	40	19. Schenectady, N. Y.	39
20. Perth Amboy, N. J.	41	20. Syracuse, N. Y.....	39
21. Bayonne, N. J.....	42	21. Elizabeth, N. J.....	40
22. Hazelton, Pa.....	42	22. Watertown, N. Y.	41
23. Watertown, N. Y.....	43	23. Canton, O.....	43
24. East St. Louis, Ill.....	44	24. Hazelton, Pa.....	44
25. Schenectady, N. Y.....	44	25. Quincy, Mass.....	44
26. Elizabeth, N. J.....	46	26. Trenton, N. J.....	44
27. Kenosha, Wis.....	48	27. Montclair, N. J.....	45
28. Montclair, N. J.....	48	28. Kenosha, Wis.....	47
29. New Orleans, La. (white)	49	29. Reading, Pa.....	47
30. Passaic, N. J.....	51	30. Perth Amboy, N. J.....	49

is both over-age and slow he becomes a serious school problem. The number of such children in the Springfield schools is exactly 1,000 and it is most significant that 617 of these are boys and only 383 are girls. The number and per cent of such children in each school are shown in Table 8.

CHILDREN WHO SHOULD BE IN SPECIAL CLASSES

In every large school system special classes should be organized for certain types of exceptional children. Since Springfield has not yet undertaken this work it should begin by making special provision for those children who are so seriously retarded that it is evident that they cannot profit by the ordinary instruction in the regular classes. These children may be located by discover-

TABLE 8.—PUPILS IN ATTENDANCE IN ELEMENTARY SCHOOLS AND
NUMBER AND PER CENT OF THEM WHO ARE BOTH OVER-AGE
AND MAKING SLOW PROGRESS

School	Pupils in attendance	Number over-age and slow	Per cent over-age and slow
Edwards.....	273	13	5
Hay.....	313	15	5
Converse.....	346	24	7
Teachers Training.....	227	22	10
Dubois.....	438	55	13
Lawrence.....	413	54	13
Harvard Park.....	156	22	14
Stuart.....	417	63	15
Ridgely.....	394	65	17
Iles.....	415	73	18
McClernand.....	282	50	18
Douglas.....	372	70	19
Palmer.....	353	67	19
Feitshans.....	372	74	20
Enos.....	424	87	21
Matheny.....	238	50	21
Lincoln.....	375	91	24
Bunn.....	391	105	27

TABLE 9.—CHILDREN AT LEAST THREE YEARS SLOW IN THE ELEMENTARY SCHOOLS

School	Number
Lincoln.....	16
Bunn.....	12
Enos.....	9
Feitshans.....	9
Iles.....	9
Palmer.....	9
Matheny.....	8
Douglas.....	6
Harvard Park.....	4
Ridgely.....	4
Dubois.....	3
Stuart.....	3
Converse.....	2
Lawrence.....	2
McClernand.....	2
Training.....	2
Hay.....	1
Edwards.....	..
Total.....	101

ing from the records which ones have made such slow progress that they have lost at least three years and so are three or more grades behind the normal.

These extreme cases number some 101 in Springfield and it is noteworthy that 63 of these are boys and only 38 are girls. They are scattered through the schools as shown in Table 9.

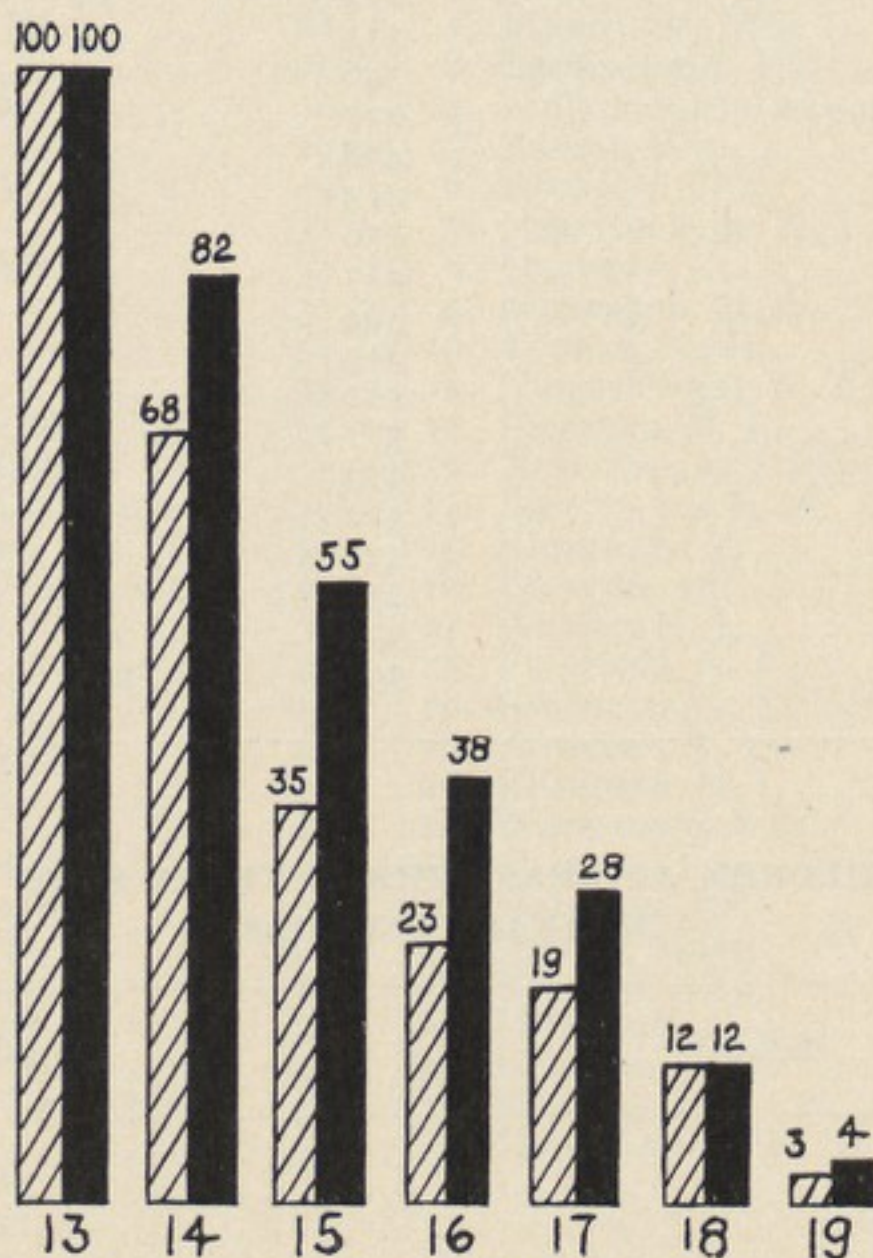


DIAGRAM 5.—COLUMNS REPRESENT NUMBER OF BOYS AND GIRLS AMONG EACH HUNDRED BEGINNERS WHO REMAIN AT EACH AGE FROM 13 TO 19. SHADED COLUMNS REPRESENT BOYS AND BLACK COLUMNS GIRLS

WHEN AND WHERE BOYS AND GIRLS LEAVE SCHOOL

Careful computations have been made as to the age at which the children drop out of school. In general terms the results show that practically all of them remain until they are 13 years old. By the time they are 14, one-fourth of them leave. Half of them leave before they are 15, two-thirds before they are 16, three-fourths before they are 17, and nine-tenths before they are 18.

These figures, however, while approximately accurate, are of but limited significance because they fail to disclose the great differences between the conditions among the boys and those for the girls.

Diagram 5 shows the number of boys and the number of girls in each 100 remaining in school at each age from 13 to 19 years. In each case the shaded column represents the boys and the one in black the girls.

The significant fact revealed by Diagram 5 is that the boys drop out in far larger numbers at the earlier ages of 14, 15, and 16, leaving a larger proportion of the girls to remain for several years more of schooling.

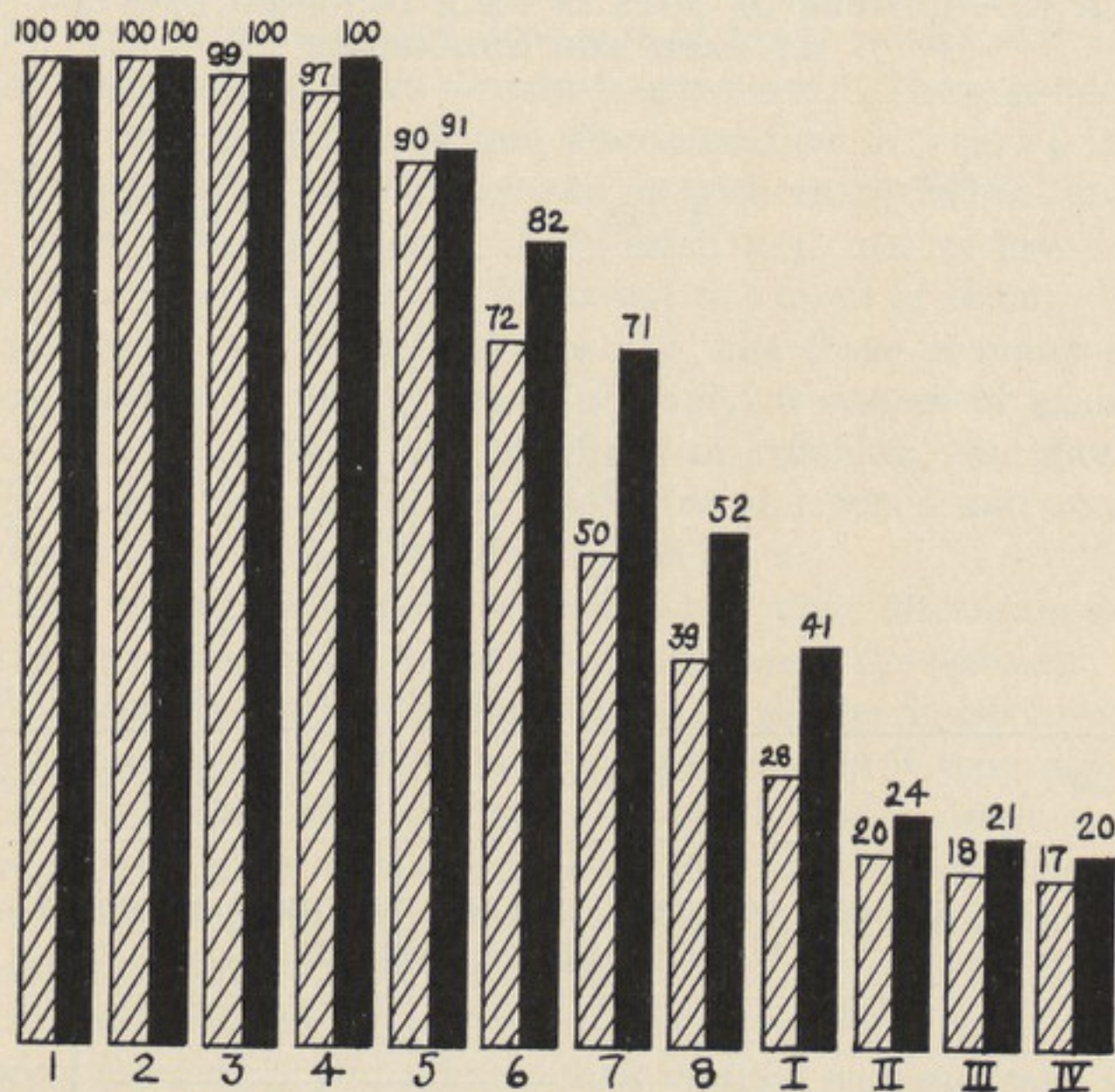


DIAGRAM 6.—COLUMNS REPRESENT NUMBER OF BOYS AND GIRLS AMONG EACH HUNDRED BEGINNERS WHO REMAIN AT EACH GRADE FROM THE FIRST ELEMENTARY TO THE FOURTH HIGH SCHOOL. SHADED COLUMNS REPRESENT BOYS AND BLACK COLUMNS GIRLS

A similar situation is revealed when we study the dropping-out of boys and girls by grades. In general we may say that children begin to drop out of the Springfield schools in the fifth grade where one-tenth of them leave and nine-tenths remain. By the time the sixth grade is reached, a quarter of them have left. Less than half finish the eighth grade, one-third enter the high school, and one-fifth complete the high school. About one child in 35 goes to college. These conditions are illustrated in

Diagram 6 in which the shaded columns represent the number of boys in each 100 remaining in each grade while the columns in black show the corresponding conditions for the girls. Again it is noteworthy that at each stage of progress a larger proportion of the girls remains in school than of the boys. These facts as to the dropping out of boys and girls are presented in Tables 10 and 11.

TABLE 10.—NUMBER OF BOYS IN EACH HUNDRED DROPPING OUT AT EACH AGE AND GRADE

Grade	Boys								Total
	13	14	15	16	17	18	19	20	
I.....
2.....
3.....	1	..	..	..	..	..	1
4.....	..	1	1	..	..	..	..	..	2
5.....	..	4	2	1	..	..	..	..	7
6.....	..	9	7	2	..	..	..	..	18
7.....	..	10	9	3	..	..	..	..	22
8.....	..	6	4	1	..	..	..	..	11
I.....	..	2	7	2	..	..	..	..	11
II.....	2	3	2	..	1	..	8
III.....	2	..	2
IV.....	2	7	6	3	18
Total.....	..	32	33	12	4	7	9	3	100

TABLE 11.—NUMBER OF GIRLS IN EACH HUNDRED DROPPING OUT AT EACH AGE AND GRADE

Grade	Girls								Total
	13	14	15	16	17	18	19	20	
I.....
2.....
3.....
4.....
5.....	..	5	2	2	..	..	..	..	9
6.....	..	7	2	..	..	..	..	..	9
7.....	..	6	4	..	1	..	..	..	11
8.....	9	6	4	..	..	..	19
I.....	8	3	..	..	..	..	11
II.....	2	6	3	4	2	..	17
III.....	3	..	..	3
IV.....	2	9	6	4	21
Total.....	..	18	27	17	10	16	8	4	100

SIGNIFICANCE OF PROGRESS RECORDS OF BOYS AND GIRLS

These comparisons between the progress made by the boys and that of the girls discloses a seriously important condition. Both boys and girls enter the primary grades in about equal numbers. The girls make better progress than the boys. They go forward more rapidly; they stay in school longer and a greater proportion of them graduate. There are more repeaters among the boys; a greater proportion are over-age for their grades; more of them make slow progress; they drop out at lower grades and earlier ages; and fewer of them remain to graduate. These conditions are not due to any conscious discrimination or neglect in the school system. They have grown up without the school authorities being aware of them. They exist in greater or less degree in a large proportion of our cities but not in all of them. Quite unconsciously the schools of this city, like those of many other cities, have developed a course of study, a system of examinations and promotions, and methods of teaching,—in short an entire school system—better fitted for the needs and requirements of the girls than for those of the boys.

These conditions can be remedied and their alteration is one of the most important tasks which confronts the schools. The boys do not leave school earlier than the girls merely because they find greater opportunities for employment, and if they did, this would not explain why they make so much slower progress than their sisters. The experience of other cities shows that when boys leave school in large numbers at early ages and in the lower grades it is not because the opportunities for securing employment are especially attractive, but because the schools are not offering them work which holds their interest and impresses them or their parents as worth while.

When the age of adolescence approaches, boys and girls alike rebel against the maternalistic atmosphere of the elementary schools and are filled with the longing to get out among men and women where they can take their places in the work of the world. To the boy this longing is a more keen and compelling force than it is to the girl. The result is that if the work of the schools is not in itself interesting, if it lacks in vitality, if it does not appeal to the young people as being real, both boys and girls drop out, but the boy goes first.

This is substantially the situation that exists in Springfield

and its solution is to be found in making the work of the upper grades and the high school more vital, more real, and more nearly related to the work and the problems of real life. How this problem may be met will be further discussed in the section dealing with the proposed intermediate schools.

PROMOTION RATES

In general the promotion rates are well up, ranging from 85 to 90 per cent. This means that at the end of each term from 85 to 90 among every hundred children are promoted to the next higher grade. The promotion rate for the entire city at the end of June, 1913, was 90 per cent, while at the end of January, 1914, it was 87 per cent. For the individual schools the rate varied from 79 to 97 per cent. For the different grades there are slight variations, the rate for the first grade being somewhat the lowest and that for the eighth grade being the highest.

In connection with the study of promotion rates, it is noteworthy that the schools having the higher promotion rates make fully as good showings in the tests of the quality of their classroom work in writing, spelling, and arithmetic as do those having lower promotion rates. In the opinion of the members of the survey staff promotion rates in Springfield are not too high and it is believed that more generally satisfactory progress is being made with these relatively high promotion rates than would be the case if a smaller proportion of the children were promoted at the end of each term.

SIZE OF CLASSES

Springfield is fortunate in having few overcrowded classes. Excluding the old Palmer School and Teachers Training School, there are 147 classrooms in use in the elementary schools. Of these, one had an average attendance of only 17 in March when the survey data were gathered, while at the other extreme was one with an attendance of 53. The average classroom had 36 pupils in attendance. Distribution of the attendance in the different classes is shown in Table 12.

While the attendance in the average classroom was 36, it is to be noted that 23 rooms had less than 30 pupils while 33 had more than 40. The classes in these latter rooms are too large and in most cases they could be reduced by transferring pupils to less

crowded schools. This would be beneficial and should be undertaken wherever possible.

TABLE 12.—ATTENDANCE IN 147 CLASSROOMS

Number in attendance	Classrooms
17.....	1
20.....	1
22.....	1
24.....	1
25.....	3
26.....	5
27.....	3
28.....	5
29.....	3
30.....	4
31.....	6
32.....	9
33.....	8
34.....	9
35.....	12
36.....	10
37.....	9
38.....	9
39.....	6
40.....	9
41.....	8
42.....	5
43.....	2
45.....	2
46.....	3
47.....	3
48.....	3
49.....	4
50.....	2
53.....	1
Total.....	147

SUMMARY

1. The school census should be reformed so as to tell how many children there are of school age in the city, who they are, where they live, and where they attend school.

2. As compared with other cities, Springfield makes a good showing in having a relatively small proportion of children who are over-age for their grades or are making slow progress.

3. There are 1,000 children in the elementary schools who are both over-age for their grades and are making slow progress. The proportion of such children varies from five per cent to 27

per cent in the different schools. These children need individual teaching and provision for giving it should be made.

4. There are some 101 cases of extreme retardation. These children should be in special classes. Some of them should not be in the public schools at all but in institutions.

5. The course of study, teaching methods, and administration of the schools are better adapted to the needs and abilities of the girls than they are to those of the boys. The boys make slower progress, fail more often, and drop out of school earlier than the girls. This condition is always found where the school work is artificial, formal, and abstract. It has been remedied in other cities and can be remedied here.

6. Promotion rates are high but not too high.

7. Classes range in size from 17 to 53, with an average of 36. Wherever possible, the children should be redistributed so as to have fewer overcrowded classes. The welfare of the children is vastly more important than the strict maintenance of school district boundaries.

CHAPTER VI

THE TEACHING FORCE

The regular teaching force consists of 238 teachers and principals. Of these, 199 are in the elementary schools and 39 in the high school.

AGES

In age they range from 19 to 71 years. Among the teachers in the elementary schools the median or midway age is 29 years, half of the teachers being 29 years old or older and the other half 29 years of age or younger. Among the high school teachers the corresponding median age is 30 years. The detailed facts concerning the ages of the teachers are shown in Table 13.

TABLE 13.—AGES OF TEACHERS IN ELEMENTARY AND HIGH SCHOOLS

Age	Ele- mentary	High	Age	Ele- mentary	High
19.....	4	..	41.....	4	..
20.....	11	..	42.....	2	..
21.....	10	1	43.....	4	1
22.....	10	1	44.....	3	..
23.....	12	..	45.....	8	..
24.....	11	1	46.....	1	..
25.....	11	1	47.....	2	2
26.....	8	4	48.....	3	..
27.....	14	1	49.....	1	1
28.....	5	5	50.....	2	..
29.....	6	3	51.....	2	..
30.....	5	4	52.....	3	1
31.....	2	..	53.....	2	..
32.....	3	2	54.....	1	1
33.....	5	2	55.....	1	..
34.....	3	..	56.....	1	..
35.....	1	1	60.....	1	..
36.....	4	..	62.....	1	..
37.....	3	1	63.....	1	..
38.....	10	1	71.....	1	..
39.....	5	2	Not stated	5	2
40.....	7	1			
			Total.....	199	39

LENGTH OF TEACHING EXPERIENCE

The length of teaching experience ranges from one year to 53 years. The average is 10 years and the average length of service in the schools of Springfield is seven years. These figures show that the teaching force is a relatively stable one. The length of service is longer than is commonly the case in other cities of similar size.

CERTIFICATION

The certificates under which the teachers hold their positions are of four classes and they are distributed as shown in Table 14.

TABLE 14.—CERTIFICATION OF TEACHERS

Kind of certificate	Elementary schools	High school	Total
First-grade county	144	25	169
Second-grade county	48	1	49
Special	2	8	10
State life	5	5	10
Total	199	39	238

APPOINTMENT AND TENURE OF OFFICE

No definite or uniform procedure exists for the appointment of teachers. In general the process is so nearly automatic that it presents few administrative problems. Each year for many years past a few of the girls in the high school have declared their intention of becoming teachers and have taken the so-called "normal course" in that school. By doing this they become candidates for appointment as pupil-teachers in the Teachers Training School. If successful in completing the high school work, they receive appointment as pupil-teachers and attend the Teachers Training School for one year. They are then practically assured of positions in the public schools and are appointed as soon as a vacancy occurs. From time to time teachers have been appointed who are not graduates of the Training School and some have entered the service from other cities.

In general these appointments have been made by the board of education and seem not to have been much influenced by the superintendent. At present the teaching force is being recruited

almost exclusively from the Training School, and the records show that during the past few years the proportion of new teachers secured from any other source has been growing smaller and smaller. In the few appointments of teachers that are not secured from the Training School the board of education seems disposed to give the superintendent a freer choice than it accorded his predecessor. This tendency is in the right direction but it should be carried much further and adopted as a settled policy. The interests of the schools will be greatly forwarded when the board gives the superintendent full power in the selection of the teachers and makes it a part of his duty to locate the most successful teachers wherever he can find them and bring them into the city's service. No definite policy exists in the matter of tenure of office, but in practice a teacher who gives satisfaction is retained indefinitely.

SALARIES

In the elementary schools teachers receive \$450 during the first year, \$500 the second year, \$550 the third year, \$600 the fourth year, \$700 the fifth year, and in the sixth year they reach the salary of \$800 which is the maximum for the regular teaching positions. The principals receive salaries of from \$900 to \$1,800. Salaries of the high school teachers range from \$800 to \$1,400. These salaries are moderate for a city of the size and importance of Springfield, but if we compare them with those paid in other cities of similar size, we find that they represent a rather liberal scale of payment for the quality of training and experience secured.

In order to compare the salaries of teachers in this city with those paid in other places, data have been secured from 16 cities as to the average annual salaries of elementary school teachers. These data are presented in Table 15. They show that Springfield is the fourth from the top in this list of 16 cities in point of average salary paid to elementary teachers. The cities range in population from 25,000 to 100,000 and have been selected because it was possible to secure from them accurate comparable figures. In each case the latest available data have been taken.

At present there is much agitation in Springfield for increased salaries for the teachers and during recent years several advances have been secured. It is the opinion of the members of the survey staff that their advances have been deserved and that if the

resources of the city warrant, the salary scale should be steadily raised providing always that larger capacity and increased ability are purchased through the advanced salaries. There is no danger that Springfield will pay its teachers too much, but there is some danger that the city will not receive the highest possible returns on its investment in terms of training and ability.

TABLE 15.—AVERAGE ANNUAL SALARIES OF ELEMENTARY TEACHERS IN 16 CITIES OF FROM 25,000 TO 100,000 POPULATION

City	Year	Average salary
1. Yonkers, N. Y.....	1912	\$835
2. Bayonne, N. J.....	1912	798
3. Somerville, Mass.....	1913	777
4. Springfield, Ill.	1914	712
5. Lawrence, Mass.....	1913	706
6. Camden, N. J.....	1912	696
7. New Bedford, Mass.....	1911	682
8. Salem, Mass.....	1912	636
9. Springfield, O.....	1913	631
10. East St. Louis, Ill.....	1911	627
11. Wilkesbarre, Pa.....	1913	618
12. Madison, Wis.....	1912	587
13. Newport, R. I.....	1913	578
14. Newburgh, N. Y.....	1912	559
15. Warwick, R. I.....	1913	540
16. Nashua, N. H.....	1912	528

EDUCATIONAL PREPARATION

The educational preparation of the members of the teaching force is shown by the figures in Table 16.

TABLE 16.—EDUCATION OF TEACHERS OF ELEMENTARY AND HIGH SCHOOLS

Graduate of	Elementary	High	Total
No school.....	28	1	29
High school.....	46	7	53
Normal or training school.....	123	6	129
College.....	2	25	27
Total.....	199	39	238

Most of these teachers have supplemented their educational preparation by work taken in higher institutions of learning during the summer school sessions. Among the elementary teachers 119 have taken courses in institutions outside of Springfield while 80 have never had any training other than that offered by the local schools.

CHARACTERISTICS OF THE TEACHING FORCE

The detailed facts concerning the teachers of the city make a good showing with two exceptions. Too many of the Springfield teachers have an inadequate educational background and too large a proportion of them have been trained in the local schools. The most important single characteristic of this group of professional workers is that they are Springfield men and women. Most of them were born here, educated here, received their professional training here, work here, and plan to continue living here. Of every 10 teachers in the elementary schools, seven are graduates of the Springfield High School and six are graduates of the Teachers Training School.

As a body of teachers they impressed the members of the survey staff as being conscientious, well-bred, intelligent, and faithful. The only important criticism that can be brought against them,—and educationally it is an important one,—is that in training, methods, and ideals, they are far too uniform. Most of them are educated in the same schools, with the same methods and by the same teachers. For many years past the principals of the Training School and the critic teachers have themselves been graduates of the Springfield Training School. One-third of the teachers of the high school are themselves graduates of the Springfield High School.

The process by which the teaching force has been recruited for many years past may fairly be characterized as an inbreeding process. The young women who have passed through the local elementary, high, and training schools and entered the service of the city are in the main of thoroughly good ability, but they have been shaped in the same mould and they have emerged wonderfully uniform in methods and ideals. This is so true that the typical Springfield teacher may be described in terms that represent not merely mathematical averages but actually apply to a considerable proportion of the teaching force. This typical teacher has the following characteristics:

She is a young woman 29 years of age.
 She is a graduate of the Springfield elementary schools.
 She is a graduate of the Springfield High School.
 She is a graduate of the Springfield Training School.
 She has taught in Springfield seven years.
 She has never taught elsewhere.
 She has attended a summer school for one term.
 She has a first-grade certificate.
 She receives an \$800 salary.

In classroom methods and mannerisms these teachers resemble each other to a degree seldom found in a city of similar size. This was illustrated by a simple test. After the members of the survey staff had visited the Training School, they made it a practice in visiting the rooms in the other schools to say to the teacher, after having seen her conduct a recitation, "You are a graduate of the Training School," or "You are not a graduate of the Training School." In no single case did the visitor make a mistake in his decision.

THE TEACHERS TRAINING SCHOOL

The local training school has been in existence for 32 years. When it was founded the intention was to have a two-year course but after work was begun this was given up and a one-year course instituted. During its entire existence the ideals of the institution have been good and its work has been and is well conducted. It is, however, and if maintained must continue to be, too small and too purely local an institution to give its graduates the breadth of scholarship and the insight into the problems of education and society that the teachers of the city must have if the schools are to be the force that they should be in the city's civic and cultural development.

The city needs each year about 16 new teachers and for their training it cannot maintain a first-class normal school, yet it should not be satisfied with less than the best professional preparation for its teachers. The existence of the training school tends to keep out of the service well trained graduates of other institutions. This is shown by the fact that almost none of the elementary school teachers are graduates of other normal schools or colleges. Most of those who are not graduates of the local training school are not trained teachers at all and many of them are not even high school graduates. The serious feature of this

is that the city is paying sufficiently large salaries to secure highly trained teachers from the best institutions.

This situation is inevitable under present conditions. The girl who has gone through the high school and the training school expects the city to give her a job and the city feels obliged to do so. This implied obligation is so real that at present the practice is to pay the pupil-teacher who has finished her year's work a low salary and give her some work to do in the training school until a vacancy occurs. The present plan for a two-year course contemplates placing the second-year students on salary so as to compensate them for having to take a two-year course instead of the one-year only.

These tendencies are in the wrong direction and will sooner or later undermine the vigor and retard the progress of the school system. The schools in no way exist for the purpose of providing jobs for the Springfield girls and those who enter their service should do so on the same basis as those from other cities. They should go through a first-class normal school or college, prove their ability by successful experience elsewhere, and then return. The weakness of a small system that trains its own teachers is that since these teachers have all learned to do the same things in the same way, they do not profit through contact with each other. They have little to discuss in a professional way and slight opportunity for contact with new methods and different ideals, or the interchange of varied experiences. The Springfield schools are suffering from just these results of the policy of excluding outside ideas and experience and recruiting from within.

The remedy for this condition is to suspend the training school and to attract to the service of the city the best teachers from other localities, near and far. There is probably no other way in which the efficiency of the system can be more rapidly increased. The building could be utilized to exceptional advantage as an intermediate school.

SUPERVISION

The principals of the different schools have practically their entire time free for administrative and supervisory work. There are supervisors of drawing, music, and industrial and household arts. The superintendent does some supervisory work.

Expert, constructive supervision is the most potent force in

bettering classroom work and improving teachers in service. At its best it exerts a pressure on every one in the system to strive constantly to become stronger, more useful, and more efficient. In the opinion of the members of the survey staff the supervision in the Springfield schools is not securing in these directions anything like all that it should. This is not because of lack of ability on the part of the supervisory officers but rather because of the traditions of the system.

In the past the schools of the city have been almost independent district schools. Each has been in large measure sufficient unto itself and there has been but little co-ordination of work.

Something of this spirit has been transmitted to the individual teacher so that we have a system in which the local schools and the local principals are relatively independent of the superintendent and within each school the classroom teachers are more than usually independent of the principal. This condition is in many respects a healthy one. It produces far better results than are found in systems where there is too much supervision of the inspectorial sort. In this city, however, the teachers have not only been accorded a large measure of liberty as to what they should teach and the manner in which they should do it, but they have been given relatively little assistance in overcoming difficulties and but slight stimulation in improving the quality of their work. This is recognized by the teachers themselves. Several of them in talking to the members of the survey staff expressed regret that during their entire teaching experience in the city they never had received either criticism, commendation, or suggestion from any supervisory officer as to the methods they were employing or the results they were securing.

AN ASSISTANT SUPERINTENDENT NEEDED

The supervision of classroom instruction is the most essential and useful work of a superintendent. His highest value to the schools is found in the standards he sets for teaching and the means he employs in attaining those standards. No matter how complex, immediate, and difficult are the administrative demands of his office, the superintendent must subordinate these claims to securing steadily increasing efficiency in classroom work.

In order that he may be able to do this in Springfield, an as-

sistant superintendent should be employed to act as an educational expert for the school system. This man should have had the highest grade of professional education supplemented by successful practical experience. It should be his particular work to study the educational problems of the city, to check up the quality of the work of the teachers, and especially to give them constructive advice looking toward the betterment of their work. Such a man should be secured from outside the city and if possible from outside of the state so as to bring into the system and make available to it the experience and ideals that have demonstrated their practical value elsewhere. This assistant should give a large part of his time to classroom visitation and, if the right man is secured, he should be able to increase in large measure the returns that the city secures for the salaries it pays its teachers and principals.

SUMMARY

1. The teaching force consists of 238 teachers and principals. Of these, 199 are in elementary and 39 in high school.

2. They range in age from 19 to 71 years and the average age is about 30 years.

3. The teaching force is relatively stable, the average length of service in the schools of Springfield being seven years.

4. Salaries are relatively high, Springfield being fourth from the top in a comparison of average salaries of elementary teachers in 16 cities.

5. Of each 10 teachers in the elementary schools, seven are graduates of the Springfield High School and six are graduates of the Teachers Training School. Too large a proportion of them have been trained in the local schools.

6. The efficiency of the system can be greatly enhanced by suspending the Training School and attracting to the service of the city the best teachers from other localities.

7. An assistant superintendent of high professional education and successful experience should be employed to assist in classroom supervision.

CHAPTER VII

THE QUALITY OF CLASSROOM INSTRUCTION

The members of the survey staff endeavored to secure an accurate and sympathetic appreciation of the quality of the classroom work. To this end they visited every classroom in the city and heard each teacher conduct at least one recitation. These classroom visits covered work by the teachers in the high school, training school, and evening schools, as well as in the elementary schools. The work of the special teachers was also seen. The aim was to observe at least one recitation conducted by every teacher in the entire school system and this aim was realized with only such exceptions as were unavoidably caused by the absence of teachers at the time the visits were made.

The total number of classroom visits by the survey staff was 684, and 273 written reports on recitations were made by them. All of the members of the staff agree that in general the best teaching is done in the primary grades and that it tends to decrease in excellence in the upper grades, although there are many individual exceptions to both these generalizations.

The strongest feature of the work lies in the friendly and intimate relationship existing in the great majority of the classrooms between the pupils and the teachers. The least commendable general feature is that throughout the system there is far too little real teaching and much too much hearing of recitations in which the teachers question the pupils to discover how well they have mastered the lessons that have been assigned to them to learn.

TEACHERS DO TOO MUCH, PUPILS TOO LITTLE

The greatest temptation and the most besetting sin of teachers everywhere is to teach too much. Only the best of them escape it anywhere and few of them are free from it in this city. On the part of the pupils there is too little real studying and too little thinking. There is too much lesson getting and too much reciting.

When a teacher regularly assigns lessons and hears recitations, she is acting on a theory that she has not formulated but which is in essence that the art of teaching consists of transferring knowledge from where it is (in the book) to where it ought to be (in the pupil's head). To bring about this transfer she assigns a lesson to the children and after giving them time to learn it she questions them to discover how much they have transferred to their memories and how well. This kind of teaching is the commonest kind, here as elsewhere, but it is not the best kind.

The sort of teaching that is of the greatest value is the sort that teaches the children to think. This sort of teaching realizes that knowledge does not consist of facts but is the product of thinking and that before anyone can master and use it he must make it part of himself by thinking it. The work of the teacher is to make the pupils think by interesting them in problems and stimulating them to solve those problems by thinking them through.

When the members of the survey staff made their written reports on the recitations, they included some simple notes designed to indicate whether the teachers were mainly engaged in questioning pupils to find how well they remembered what they had studied in the books, or whether they were trying to help the children through observing, thinking, and discussing.

In the first place they noted whether it was the teacher or a pupil who was talking when the visitor entered. In seven rooms out of every 10 it was the teacher who was doing the talking while in the remaining three it was a pupil.

Similarly a record was made as to whether the recitation was predominantly one in which the teacher heard the pupils recite or whether she was attempting to stimulate them to think for themselves. In seven rooms out of each 10 the records show that in the judgment of the visitor the teacher was mainly engaged in hearing the pupils recite what they had learned in the book.

Another record made at each recitation related to the type of questioning mainly employed by the teacher. The results showed that in eight out of each ten rooms the observer judged that the questions were predominantly of such a nature that the pupils could answer them only by stating facts or giving definite information. In two out of each ten rooms the object of the questioning was mainly to get the pupils to describe or explain.

A fourth set of records related to the answers of the pupils and showed whether these mainly consisted of single words, of phrases,

or of sentences. These records show that the pupils in five rooms out of every ten answered mainly in single words, while in two cases they used phrases and in the remaining three the answers were mostly in complete sentences.

All of these records point in the same direction. They indicate that throughout the city the work of the teachers largely consists of hearing the pupils recite the lessons that they have studied in the textbooks. Such records as these would have little importance if they referred merely to the work of a few teachers in the conduct of a few recitations. In this case, however, they indicate characteristics of the work of all of the teachers and in hundreds of recitations. The kind of classroom work that has been described is no more prevalent in Springfield than it is in many other cities. It is not, however, the best sort of teaching and its general level of quality can be greatly improved.

Where the work of the teachers largely consists of hearing the pupils recite what they have studied in the textbooks, many of the questions are sure to be leading questions, for the teacher knows exactly what answer she expects the child to make. There is much of this sort of questioning in this city. For example, one of the principals in conducting a lesson on partial payments, asked questions as follows: "You will begin to pay interest from the beginning, won't you?" "If you can repay part, you will, won't you?" "Then you figure how much is left, don't you?" "At first you will owe \$1,000, won't you?" This kind of work is by no means rare but a still more common procedure is for the teacher to make statements omitting one word which the pupil supplies. In a geography lesson on South America one teacher said, "The pampas are full of ——. From palm trees they get ——. Near the coast the country is very ——, etc." These are not isolated cases but represent work of a kind that is common throughout the schools. It is not good teaching.

Another and even more serious condition arises from the limited educational and cultural preparation of many of the teachers. Because of this there is far too much incorrect English used by the teachers and considerable misinformation is given when the children ask even simple questions. In the high school two teachers repeatedly use the phrase, "It hain't." Among expressions used by teachers and noted in the reports on recitations are, "What was his feelings?" "These sort of things,"

"Will some one tell what they remember?" "It don't matter," and, "If it was me."

In one spelling class the teacher wrote "aigain," and in a music lesson the teacher wrote on the board the name of the selection as the "Boheminan Girl." One departmental teacher of geography explained that the British Isles are thickly populated because they have a warm climate and heavy rains which enable them to raise vast crops of grain which support the people. She further explained that they were the foremost nation in the weaving of woolen cloth because they support great herds of sheep. In another lesson the teacher asked, "Why have the British Isles become notorious?" and answered the question herself by saying, "Because they are the land-mass center of the world." Another departmental teacher of arithmetic spent nearly an entire period trying to get a class to correct an example that was already correctly worked.

It is probable that some of the errors noted were caused by the nervousness that may have resulted from the presence of the visitors, but most of them cannot be so explained. In the main they are attributable to a lack of adequate educational, professional, and cultural background on the part of some of the teachers.

The recitations on which the members of the survey staff made written reports were 273 in number and their distribution among the different subjects is shown in Table 17.

DISCIPLINE IS GOOD

Throughout the elementary schools the discipline is good. Almost everyone is interested and nearly all work hard. In making nearly 700 classroom visits no member of the survey staff witnessed one serious act of disorder. These conditions are due to the high level of personality among the teachers, the generally good home training of the pupils, and to the prevailing aim to secure order through interest rather than through coercion.

TESTS IN SPELLING

Spelling tests of 10 dictated words were given through the system in all of the grades from the second to the eighth inclusive. The words used in these tests were chosen from lists used by the Division of Education of the Russell Sage Foundation in an investigation that it is now conducting of the spelling ability of

TABLE 17.—RECITATIONS ON WHICH WRITTEN REPORTS WERE MADE BY MEMBERS OF THE SURVEY STAFF

Elementary schools		High School		Evening schools	
Subject	Recita- tions	Subject	Recita- tions	Subject	Recita- tions
Reading.....	61	Algebra.....	4	Manual training	3
Arithmetic.....	33	Latin.....	4	Sewing.....	2
Literature.....	20	English.....	3	Cooking.....	2
Singing.....	19	History.....	3	Commercial	
Spelling.....	17	Civics.....	2	arithmetic.....	2
Geography.....	16	Grammar.....	2	Arithmetic.....	2
Hand work.....	10	French.....	2	Spelling.....	1
Writing.....	9	Business arith-		Penmanship.....	1
Grammar.....	8	metic.....	2	Reading.....	1
Language.....	7	Stenography.....	2	Mechanical	
History.....	4	Physics.....	2	drawing.....	1
Story telling.....	3	German.....	1		
Drawing.....	2	Geometry.....	1		
Memory gems..	2	Chemistry.....	1		
Nature study..	2	Biology.....	1		
Domestic science	2	Literature.....	1		
Manual training	1	Cooking.....	1		
Physiology.....	1	Millinery.....	1		
Composition.....	1	Sewing.....	1		
Phonics.....	1	Manual training	1		
		Lathe work.....	1		
		Mechanical			
		drawing.....	1		
		Printing.....	1		
		Free hand			
		drawing.....	1		
Total.....	219		39		15

children in elementary schools. The Division has conducted studies to discover the 1,000 words most commonly used in writing and it has made these words into spelling lists with which children in nearly 100 American cities have been tested. From among these words 10 were chosen which this investigation has shown are on the average spelled correctly by 70 per cent of the children in the second grades of other cities. Similarly 10 words were chosen which children in the third grades of other cities spell on the average 70 per cent correctly. In the same way 10 words were chosen for each of the other elementary grades and in each case they were of such difficulty that on the average seven out of 10 children spell them correctly while three mis-

TABLE 18.—WORDS USED IN SPELLING TESTS. ON THE AVERAGE SEVEN CHILDREN OUT OF 10 IN THE SAME GRADES IN OTHER CITIES CAN SPELL THEM CORRECTLY

2nd grade	3rd grade	4th grade	5th grade	6th grade	7th grade	8th grade
foot get for horse cut well name room left with	fill point state ready almost high event done pass Tuesday	forty rate children prison title getting need throw feel speak	several leaving publish o'clock running known secure wait matter flight	decide general manner too automobile victim hospital neither toward business	district consideration athletic distinguish evidence conference amendment liquor experience receive	petrified tariff emergency corporation convenience receipt cordially discussion appreciate decision

spell them. These lists of 10 words for each grade are shown in Table 18.

Results of these tests showed that in general the children of this city can spell as well as the children in other cities. Their spelling ability is neither greater nor less; it is precisely the average. In all 3,612 children were tested with words that children in other cities on the average spell 70 per cent correctly and the result was that the final average for the Springfield children was also 70 per cent. It was found, however, that there was variation in the results for the different grades and schools. The averages for the different grades of the city were as shown in Table 19.

TABLE 19.—PER CENT OF WORDS CORRECTLY SPELLED BY CHILDREN IN EACH GRADE IN 10 WORD SPELLING TESTS

Grade	Per cent correct
2.....	70
3.....	65
4.....	70
5.....	72
6.....	68
7.....	73
8.....	75
Total.....	70

The differences in results for the several schools were more marked. They ranged from 86 in the school making the best

record to 58 in the one making the poorest showing. These results are shown in Table 20.

TABLE 20.—PER CENT OF WORDS CORRECTLY SPELLED BY CHILDREN IN EACH SCHOOL IN 10 WORD SPELLING TESTS

School	Per cent correct
Hay.....	86
Lawrence.....	79
Stuart.....	77
Harvard Park (grades 2-5).....	75
Enos.....	74
Edwards.....	73
Training (grades 2-4).....	72
Feitshans.....	69
Dubois.....	68
Ridgely.....	68
Bunn.....	67
Lincoln.....	66
Converse.....	66
Matheny.....	66
Iles.....	64
McClernand.....	64
Douglas.....	64
Palmer.....	58
Total.....	70

TESTS OF HANDWRITING

Samples of handwriting were secured from all of the pupils of all of the fifth, sixth, seventh, and eighth grades. These were short dictation exercises taken from portions of the readers with which the pupils were familiar. These samples were 2,359 in number.

After being collected from the schools, they were sent to New York and each sample was rated by three competent judges in the offices of the Division of Education of the Russell Sage Foundation. The Ayres Handwriting Scale was used in making these ratings. This scale is a device for measuring the quality of children's handwriting in definite, quantitative terms. It consists of a long sheet of paper on which are reproduced samples of handwriting ranging from very poor to excellent and the samples are so selected that the step upwards in quality from the poorest writing to the next better one, the one above that, and so on, are all equal.

Some idea of how this scale is used may be gained from the illustration on this page which reproduces very small specimens of writing rated by this scale as of qualities ranging from 20 to 90. The original scale was developed from more than 18,000 careful measurements of the writing of pupils in the four upper

20 *The great error in Rip's composite*

30 *his of steel favorite a been fact*

40 *The hair of the affrighted pe*

50 *His school was a low builder*

60 *It is remarkable that t*

70 *At length he reached to*

80 *As I chabod jogge*

90 *of music was heard*

SAMPLES OF CHILDREN'S HANDWRITING RATED AS QUALITIES 20 TO 90 BY
MEASURING SCALE

grades of some 40 cities in all parts of the country.* The average quality of writing for children of the upper elementary grades is that marked on the scale as quality 50.

* A Scale for Measuring the Quality of Handwriting of School Children. Division of Education, Russell Sage Foundation, 1912.

The careful measurement of the quality of the 2,359 samples of writing of the Springfield schools showed that the average quality was 49.3 as compared with 50 for the other cities. This means that the writing of the children in the schools of this city is practically equal to the average found in other cities. The diagram

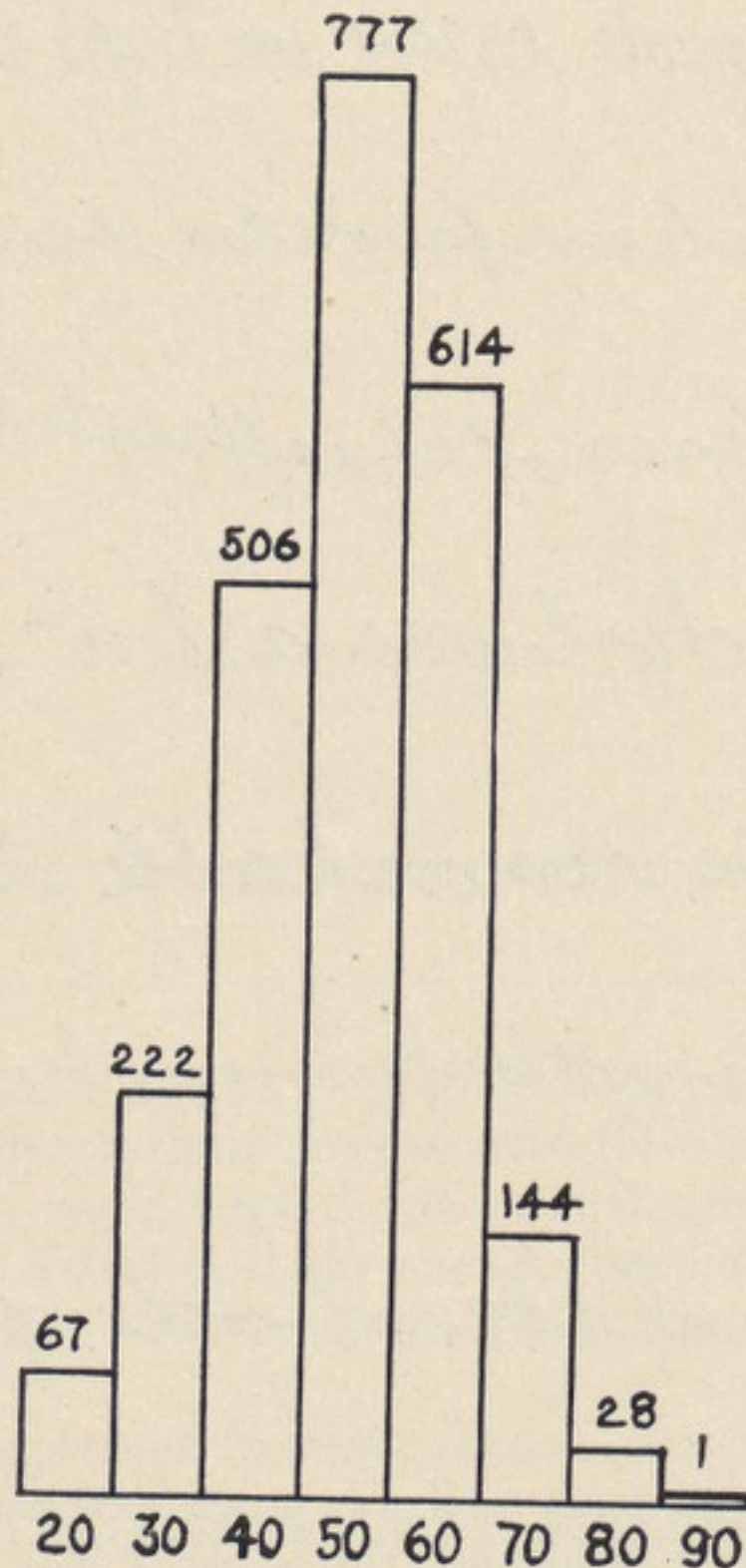


DIAGRAM 7.—COLUMNS REPRESENT NUMBER OF SAMPLES OF CHILDREN'S HANDWRITING RATED AS OF EACH QUALITY FROM 20 TO 90

on this page shows the number of samples of each quality from 20 (very poor) to 90 (excellent).

As in the case of the spelling tests, it was found that there was a considerable variation in the results for the different schools. Table 21 shows the average quality of writing for each school.

TABLE 21.—AVERAGE QUALITY OF HANDWRITING OF CHILDREN
IN FOUR UPPER GRADES OF EACH SCHOOL

School	Average quality
Lawrence.....	56
Hay.....	56
Stuart.....	54
Matheny.....	53
Edwards.....	52
Feitshans.....	51
Harvard Park.....	51
Dubois.....	49
Enos.....	49
McClernand.....	49
Ridgely.....	49
Bunn.....	48
Iles.....	47
Lincoln.....	47
Douglas.....	44
Converse.....	42
Palmer.....	42
Total.....	49

TESTS IN ARITHMETIC

The Stone Tests in Arithmetic were given in the advanced divisions of the sixth grade throughout the city. These consist of a standard test in fundamental operations and another in reasoning, and records are available of the results obtained by applying them in 26 other school systems. The way in which these tests were selected, their purpose, content, and method of scoring, are explained in Dr. Stone's "Arithmetical Abilities and Some Factors Determining Them," Columbia University, Contributions to Education, Teachers College, Series No. 19.

The main purpose of the test in fundamentals is to determine the ability of sixth grade pupils in addition, subtraction, multiplication, and division. The purpose of the test in reasoning is to determine the ability of these children to reason in connection with practical arithmetical problems. In both tests the problems have been selected and arranged after careful trial and the scoring is weighted according to the degree of difficulty of the problems. The children were allowed exactly 12 minutes for the test in fundamentals and 15 minutes for the test in reasoning. In both cases the tests were purposely made too long for the

pupils to finish within the time set. After these tests were given in the Springfield schools, the papers were sent to New York and carefully scored in the offices of the Division of Education of the Russell Sage Foundation.

TEST IN FUNDAMENTALS

Fourteen examples were given to test the ability of the children in the fundamental arithmetical operations. These problems, together with the credits allowed in scoring each, are as follows:

ARITHMETIC—FUNDAMENTALS

Work as many of these problems as you have time for; work them in order as numbered:

		Credits
1. Add	$\begin{array}{r} 2375 \\ 4052 \\ 6354 \\ 260 \\ 5041 \\ 1543 \\ \hline \end{array}$	
2. Multiply	3265 by 20	4 in addition
3. Divide	3328 by 64	2 in multiplication
4. Add	$\begin{array}{r} 596 \\ 428 \\ 94 \\ 75 \\ 302 \\ 645 \\ 984 \\ 897 \\ \hline \end{array}$	2 in div., 2 in mult., 1 in sub.
5. Multiply	768 by 604	3 in addition
6. Divide	1918962 by 543	3 in mult., 2 in addition
7. Add	$\begin{array}{r} 4695 \\ 872 \\ 7948 \\ 6786 \\ 567 \\ 858 \\ 9447 \\ 7499 \\ \hline \end{array}$	4 in div., 4 in mult., 3 in sub.
8. Multiply	976 by 87	4 in addition
9. Divide	2782542 by 679	2 in mult., 4 in addition
10. Multiply	5489 by 9876	4 in div., 4 in mult., 2 in sub.
11. Divide	5099941 by 749	4 in mult., 7 in addition
12. Multiply	876 by 79	4 in div., 4 in mult., 2 in sub.
13. Divide	62693256 by 859	2 in mult., 3 in addition
14. Multiply	96879 by 896	5 in div., 5 in mult., 4 in sub.
		3 in mult., 7 in addition.

The total scores credited to the children were reduced to show the scores per each hundred children and in this way were made

comparable with the results secured by children in the 26 other school systems. This comparison of the results of the test in fundamentals shows that the Springfield children are somewhat above the average in the ability to perform the fundamental arithmetical operations. In general they work more rapidly and less accurately than the children of the other cities. The comparative results are shown in Table 22.

TABLE 22.—SCORE PER EACH 100 CHILDREN IN FUNDAMENTALS IN ARITHMETIC TESTS IN SPRINGFIELD AND IN 26 OTHER SCHOOL SYSTEMS

	Lowest	Middle	Highest	Springfield	Springfield's rank from top
Addition.....	771	1,171	1,376	1,330	3
Subtraction.....	159	360	547	375	12
Multiplication.....	641	1,113	1,433	1,214	9
Division.....	241	577	814	621	12
Accuracy.....	69	91	95	86	25
All processes.....	1,841	3,173	4,099	3,540	9

By referring to the last column of the table, it will be seen that the Springfield children made a distinctly high record in addition, the rank of this city being third from the top among the 27 cities for which results are considered. The work in subtraction and division is slightly above the average while that in multiplication is still better. In point of accuracy, the city makes a distinctly low record, ranking 25th among the 27 school systems. Taking all of these results together, it will be seen that Springfield ranks in ninth place among the 27 cities, or one-third of the way down from the top. This is a good showing and indicates that the children of the city compare favorably with those of other cities in their mastery of the fundamental operations in arithmetic.

TEST IN REASONING

The test in reasoning consisted of a series of 12 problems and the children were allowed 15 minutes to work on them. The test was purposely made longer than could be completed within the time allowed. In scoring the results a credit of one was given for each example where the reasoning was correct, even though

there were errors in the computation. Where the reasoning was partly right and partly wrong, a corresponding fractional credit was given and the mistake was counted in scoring accuracy. The problems given, together with the credits allowed, were as follows:

ARITHMETIC—REASONING

Solve as many of the following problems as you have time for; work them in order as numbered:

- | | Credit |
|---|--------|
| 1. If you buy 2 tablets at 7 cents each and a book for 65 cents, how much change should you receive from a two-dollar bill? | I |
| 2. John sold 4 Saturday Evening Posts at 5 cents each. He kept half the money and with the other half he bought Sunday papers at 2 cents each. How many did he buy? | I |
| 3. If James had 4 times as much money as George, he would have \$16. How much money has George? | I |
| 4. How many pencils can you buy for 50 cents at the rate of 2 for 5 cents? | I |
| 5. The uniforms of a baseball nine cost \$2.50 each. The shoes cost \$2 a pair. What was the total cost of uniforms and shoes for the nine? | I |
| 6. In the school of a certain city there are 2,200 pupils; half are in primary grades; one-fourth in the grammar grades; one-eighth in the High School, and the rest in the night school. How many pupils are in the night school? | 1.4 |
| 7. If $3\frac{1}{2}$ tons of coal cost \$21, what will $5\frac{1}{2}$ tons cost? | 1.2 |
| 8. A news dealer bought some magazines for \$1. He sold them for \$1.20, gaining 5 cents on each magazine. How many magazines were there? | 1.6 |
| 9. A girl spent one-eighth of her money for car fare, and three times as much for clothes. Half of what she had left was 80 cents. How much money did she have at first? | 2.0 |
| 10. Two girls receive \$2.10 for making buttonholes. One makes 42, the other 28. How shall they divide the money? | 2.0 |
| 11. Mr. Brown paid one-third of the cost of a building; Mr. Johnson paid half the cost. Mr. Johnson received \$500 more annual rent than Mr. Brown. How much did each receive? | 2.0 |
| 12. A freight train left Albany for New York at 6 o'clock. An express left on the same track at 8 o'clock. It went at the rate of 40 miles an hour. At what time of day will it overtake the freight train if the freight train stops after it has gone 56 miles? | 2.0 |

When the papers in the reasoning test were scored, it was found that the children had not made as good a showing in reasoning as they did in fundamentals. Instead of the Springfield schools being distinctly above the average as in the former test, in this they are distinctly below the average. The results were treated as before in such a way as to show the number of scores per 100 pupils and in this way the results were made comparable with those from the other systems. The final results of this comparison are shown in Table 23.

TABLE 23.—SCORE PER EACH 100 PUPILS IN REASONING IN ARITHMETIC IN SPRINGFIELD AND 26 OTHER SCHOOL SYSTEMS

	Lowest	Middle	Highest	Springfield	Springfield's rank from top
Reasoning.....	356	550	914	508	19
Accuracy.....	55	72	86	70	19

The figures in the last column of the table show in both the amount of work accomplished and the accuracy with which it was done the Springfield children rank in the 19th place among the 27 systems compared. That is to say, they are more than two-thirds of the way down the list.

COMPARATIVE STANDING OF DIFFERENT SCHOOLS

As in the tests in writing and spelling, it was found that there was a considerable variation in the standing of the different schools. By following the methods used in computing the results for the entire city, the comparative ranks of the different schools were found in fundamentals and in reasoning as well as in accuracy in fundamentals and accuracy in reasoning. These comparative ranks are shown in Table 24 in which the first four columns indicate the comparative ranking of each school in each test and the last column shows the final rank of the schools when all of the tests are considered together. The order in which the schools are named in the table indicates their final rank from highest to lowest. In general the tests in arithmetic show that the Springfield schools compare fairly well with those of other

cities in their arithmetic work but that better results should be secured in accuracy and in reasoning.

TABLE 24.—RANK OF SCHOOLS IN FOUR TESTS IN ARITHMETIC AND FINAL RANK IN ALL TESTS COMBINED

School	Fundamentals		Reasoning		Final score
	Accomplishment	Accuracy	Accomplishment	Accuracy	
Edwards.....	4	4	2	2	12
Hay.....	1	1	3	7	12
Lawrence.....	6	6	1	15	28
Lincoln.....	13	3	10	3	29
Stuart.....	7	2	8	13	30
Bunn.....	3	15	9	4	31
McClernand.....	14	5	5	8	32
Iles.....	2	10	4	16	32
Matheny.....	8	13	6	6	33
Ridgely.....	10	9	16	1	36
Enos.....	9	12	7	9	37
Feitshans.....	5	14	11	11	41
Converse.....	11	7	14	12	44
Palmer.....	12	16	12	5	45
Douglas.....	16	8	15	10	49
Dubois.....	15	11	13	14	53

SUMMARY

1. The members of the survey staff made 684 classroom visits of which 273 were for the purpose of observing teaching methods, and the remainder for noting details as to physical equipment or making humidity, ventilation, and illumination tests.

2. The strongest feature of the work is the free relationship between pupils and teachers. The weakest feature is that throughout the system there is too little real teaching and too much hearing of recitations.

3. In too large a proportion of the classrooms the work suffers from the inadequate professional, educational, and cultural preparation of the teachers.

4. Throughout the elementary schools the discipline is good.

5. Standard spelling tests in all grades from the second through the eighth indicate that in general the children spell as well as average children in other city school systems.

6. Measurement of the quality of handwriting of pupils in the

four upper grades shows that it is in general as good as that of children in the same grades in other cities.

7. Standard tests in arithmetic show that in Springfield children do work in fundamentals more rapidly but less accurately than average children in other cities. In reasoning their work is less rapid and less accurate than the average work in other cities.

CHAPTER VIII

THE COURSE OF STUDY

The course of study is so varied in character in its different parts that it is not possible to make valid general statements concerning it. In part it was inherited from courses used in the schools many years ago and in these portions it retains the rigid requirements of former times. In some sections it directs precisely which pages are to be taught from certain textbooks while in others it merely mentions topics and leaves the teacher free to find the material where she can. For some grades and subjects it carefully prescribes methods to be used and in others no mention of methods is made. In places time allotments are given and elsewhere there is none mentioned.

The reason for this prevailing condition of heterogeneity is that the old course of study, adopted many years ago, has from time to time been repaired and revamped but it has never been thoroughly revised. At the present time another reshaping of some parts of the course is well under way and this again is largely in the nature of a partial recasting of the old materials. These successive partial revisions have not greatly profited by the experience of the most successful and progressive school systems of other cities. They have kept the course from becoming dead but they have not succeeded in making it as live as it should be. It is greatly to the credit of the present superintendent that in the work of revision now going on the supervisors, principals, and teachers are all taking part. But it is not enough that the best experience within the system should be consulted. The results of the best thinking, the widest experience, and the most mature judgment of other cities, as crystallized in their courses of study and the published reports concerning them, should also be carefully considered with the object of producing the best possible course of study for Springfield.

The present course prescribes 15 subjects of which 12 are assigned for all grades from the first to eighth inclusive.

These 12 subjects are:

Reading	Penmanship
History	Physiology and hygiene
Language	Physical culture
Phonics	Drawing
Spelling	Singing
Arithmetic	Manual training

The three remaining subjects are literature and nature study, which are assigned for the first four grades, and geography which is taught in the six upper grades.

The course as published is only partially followed so that general statements regarding it would apply to what is printed rather than to what is actually happening in the classrooms. A careful study of the programs of the 31 third grades of the city shows that although the course of study prescribes 15 subjects for all of them, there are only six which appear on all of the programs. These are reading, arithmetic, geography, music, drawing, and industrial work. A similar study of the eighth grade programs shows only eight subjects appearing in all of them. This condition has advantages as well as disadvantages but it is one which must be kept in mind in discussing the course of study, for the important consideration is what is actually being taught rather than what the printed course calls for.

VARIATIONS IN TIME ALLOTMENT

Just as the prevailing lack of uniformity renders it impossible to make general statements about the course of study, so a similar condition maintains with respect to the time allotted to the different subjects in the several grades. There is no official time allotment for the city and so the teachers in each school determine for themselves the amount of time to be devoted in the daily program to each subject. This results in the widest variations in the amount of emphasis placed on different parts of the curriculum.

A careful study of the time allotments followed in the spring of 1914 in the 31 third grades of the city shows variations as follows:

Reading.....	from 25 minutes to 60 minutes a day
Spelling.....	" no " " 40 " " "
Literature.....	" no " " 25 " " "
Writing.....	" no " " 25 " " "
Opening exercises.....	" no " " 20 " " "
Language.....	" 10 " " 30 " " "
Recess.....	" 10 " " 40 " " "
Dismissal.....	" no " " 20 " " "

The serious feature of this condition is that these variations are not the product of careful planning and serious thought but exist precisely because neither thought nor planning has been devoted to securing the best allotment of time. The existing variations are accidental and the Springfield principals have been unaware of their existence. They mean that the pupils' time, which is the most precious asset of the school, is being disposed of without due care and consideration. In subject after subject some schools are devoting two or three times as many hours per year as are other schools and they are doing this without basing their action on any good evidence. The serious importance of such a prodigal use of pupils' time becomes apparent when one remembers that the unprofitable use of 35 minutes a day through the elementary course means the loss of one school year from each child's educational life. The teachers, principals, and superintendent of the city should make a careful study of the time allotments in the best systems elsewhere and then decide how much time they will devote to each subject in each of the grades in Springfield. This time allotment should be used as a standard rather than as a requirement. Teachers should be permitted to depart from it whenever they can put forward a good reason for so doing but such departures should be based on carefully thought-out reasons and not on chance or caprice.

PRECIOUS TIME WASTED ON USELESS MATERIAL

The most serious defect of the present course of study, including some of the suggested revisions now under consideration, is that it makes thousands of children waste tens of thousands of precious hours in the laborious acquisition of facts for which they will never have any practical use. While the survey was under way the staff attempted to test the practical value of some of the subject matter taught to children in the elementary grades.

For this purpose short examinations were prepared from the material prescribed by the course of study and actually being taught in the upper grades in spelling, arithmetic, history, and geography. Through the co-operation of a woman prominent in social and intellectual circles of the city, 11 of the leading successful citizens were brought together one evening and asked to take these examinations. The object was to find out whether or not the material that the children of the upper grades were being taught was of the sort actually used by able men of affairs

in the conduct of their daily business. For carrying out the test the most prominent and successful citizens were purposely chosen and in making up the examinations the most difficult material was purposely selected. The result of these examinations in spelling, geography, arithmetic, and history of the fifth, sixth, and seventh grades was that no one of the men examined made a passing mark in any subject. The reason is that the material on which they were examined, and which the children in the schools are daily learning, is of a sort that is seldom or never met with in the business of even the most successful men engaged in commercial and professional pursuits. The gentlemen who submitted to the examination were the following:

- A state senator
- A former lieutenant-governor
- The president of a manufacturing concern
- The former superintendent of parks
- A banker
- A physician
- A merchant
- A lawyer
- A newspaper editor
- An efficiency engineer
- A clergyman

The test in spelling consisted of ten words taken from the spelling lists of the seventh grade. These words were as follows:

- | | |
|------------------|-------------------|
| 1. abutilon | 6. reconnoissance |
| 2. bergamot | 7. erysipelas |
| 3. deutzia | 8. mnemonics |
| 4. daguerreotype | 9. trichinæ |
| 5. paradigm | 10. weigelia |

Among the 11 men taking the examination, one spelled six of these words correctly. Three succeeded in spelling four words, two got three words right, one got two, three spelled one word correctly, and one failed on every word. It is not surprising that they failed so completely for no citizen in any ordinary walk of life needs to know how to spell these words. When the rare occasion arises that he needs to write one of them, he looks it up in the dictionary. These words and scores of words like them are studied in the classrooms as well as found in the spelling book.

The test described above was suggested by the experience of

the director of the survey who went into a sixth-grade room where an examination in spelling was being given. He took the test with the children. It consisted of 20 words and he failed on six of them. These six words are included in the 10 word list used in the examination of the business and professional men. Some of the children in the schools can spell these words correctly but while they are laboriously learning to do it, many of them are still unable to spell short and common words as "which," "separate," and "receive."

The test in geography was taken from the sixth-grade work as prescribed by the revised course of study and consisted of five questions which are all included as requisites in the new course. These questions are the following:

1. What is the distance in degrees from Portugal to the Ural Mountains?
2. How many miles long is South America?
3. Name the capital of Montenegro.
4. Locate the desert of Atacama.
5. Where is the Pamir Plateau?

One of the 11 men was able to answer the third question. All of the rest of them failed on all five questions.

The test in arithmetic was taken from the work of the sixth and seventh grades and consisted of five questions as follows:

1. Italy uses the time of 15 degrees East and Illinois that of 90 degrees West. When it is noon in Italy what time is it in Illinois?
2. How much pressure will you have to exert on the handles of a pair of shears 3 inches from the fulcrum in order to exert a pressure of 5 lbs. at a point 5 inches from the fulcrum?
3. What is the area of the base of a cylindrical gallon can 10 inches high?
4. Express 150 degrees Centigrade in terms of Fahrenheit.
5. If 2 liters of alcohol weigh 1.58 kilograms, what is the specific gravity of alcohol?

The results in arithmetic were more successful than those in geography. Three of the 11 men worked the first problem successfully, two got the correct answer to the second and third problems, one solved the fourth, and all failed on the fifth.

The examination in history asked for the identification of 10 dates as follows:

- | | |
|---------------------|---------------------|
| 1. 1000 | 6. 1818 |
| 2. 1607 | 7. 1846 |
| 3. 1638 | 8. April 14, 1861 |
| 4. 1763 | 9. 1873 |
| 5. October 17, 1781 | 10. September, 1901 |

Among the 11 men, one correctly identified the first date, two the second, none the third, three the fourth, one the fifth, ten the sixth, one the seventh, eight the eighth, one the ninth, and three the tenth. These 10 dates, which meant so little to these men, were selected from the 91 dates which the course lists as necessary to be learned by memory by all pupils with the note that the list may be lengthened to suit the needs of the individual teacher.

Such a series of tests as those described cannot finally and satisfactorily tell us just which portions of our courses of study are out of harmony with the practical requirements of modern life. Undoubtedly it would be possible to pick out details from almost any set of textbooks which could be converted into questions on which many able and successful adults would fail. Nevertheless it is believed that the tests conducted in Springfield do indicate symptoms of the greatest problem that the schools of this and other cities are facing. This problem is the lack of intimate relationship between the work of the schools and the work of the world.

Conditions in this city are no worse than in scores of other cities but they can be and should be far better than they are. School work needs to be real instead of artificial. When children work together in the solving of a problem or the making of a map their work is social and co-operative. When they are committing to memory the spelling of "weigelia," "trichinæ," and "paradigm," they are individual and exclusive. When they are making something material or abstract because they need it in their business, they are active and alert. When they are listening to recitations concerning the distance in degrees from Portugal to the Ural Mountains, they are mostly passive and inert. When they are learning or making something real that has an object behind and a result to come, they are energetic. When they listen to or watch or read something that is to them artificial, they are apa-

thetic. In all of these characteristics the children in our schools closely resemble us adults.

FREE TEXTBOOKS WILL HELP SOLVE PROBLEM

No small part of the responsibility for the subject matter now being taught is attributable to the textbooks used. Several of them are distinctly unsatisfactory and yet it is almost impossible to have them abandoned and new ones substituted. The reason for this is that, while the cost of school books is relatively light and constitutes but a small proportion of the total cost of education, it falls directly on the parents instead of being paid from the general taxes and so it is made to seem of extraordinary importance. The adoption of new textbooks means an immediate and direct expenditure by thousands of parents and this is always actively and generally successfully opposed.

The result is that the schools are still using textbooks which should long since have been abandoned. All of the worry, annoyance, and petty politics that have characterized attempts to change textbooks can be avoided by adopting the free textbook policy for the city. Textbooks have been furnished free by Philadelphia for almost a century and by many cities for almost half a century. They are provided for by compulsory law throughout 12 states and are supplied in portions of 15 other states.

Since the system applies to perhaps half of the school children of the country, it is in no sense experimental. In no case where free textbooks have been adopted is there any record of a movement looking toward the repeal of the system. In every state where they are supplied, the state superintendent testifies that the system increases the efficiency of the teaching in the schools. Free textbooks tend to prolong the school life of the child, make the adoption of new texts easier, facilitate uniformity, and increase the promptness with which schools begin work in the fall. They result in a larger proportion of the children going on to high school. Finally, schoolbooks bought by the community cost the community about 20 per cent less than when bought by individuals. For all of these reasons it is strongly recommended that Springfield take her place among the cities that furnish textbooks free throughout the public schools. If the system is installed, the cost will amount annually to from \$1.00 to \$1.50 per pupil. Under the free textbook plan this will be met from the taxes instead of being paid directly by the parents.

SUMMARY

1. The course of study in its present form is the product of a number of partial revisions of a course in use many years ago. In parts it is rigid and behind the times, while in other parts it is modern and progressive. It is not closely followed in the schools.

2. The time devoted to each subject varies so widely in the different schools that no general study of the time allotment is possible.

3. A new course of study and time allotment should be developed and in this work the best experience of the most progressive school systems should be utilized.

4. Tests of the existing course show that it includes much material that is so artificial and unrelated to the needs of real life that it should be abandoned and more useful matter substituted.

5. The city should adopt the policy of supplying textbooks free. This promotes educational efficiency, facilitates uniformity, and reduces expense to the community.

CHAPTER IX

FINANCIAL ADMINISTRATION

Public education can be bought and paid for. The perpetual problem of any city is how many of its children is it willing to educate and how well. Within limits that have never yet been reached, each city may secure for its children as much and as good education as it is able and willing to pay for. How much and how good education the children actually get depends on two factors. The first is how much money the city spends and the second is whether or not it uses each dollar so as to get the best and largest educational returns.

In other portions of this report an endeavor has been made to measure some of the returns received by the city on its educational investment. In this section comparisons are made to discover how the school expenditures of Springfield compare with those of other cities similar in size in order to find out whether this city is paying more or less than the others for the education of each child and for different educational purposes.

Springfield spends on its public schools each year about one-third of a million dollars. This money comes in the main from two sources—local taxes and state funds. Of every dollar received, approximately 91 cents comes from local taxes and the remaining nine cents from the state. In collecting and expending the local funds the board of education has large liberty of action. It decides each year how large the tax rate for school support shall be and it has full power in determining the size of the levy so long as it does not take for each \$100 worth of assessed valuation more than \$1.50 for educational purposes or more than \$1.50 for building purposes. It can spend the money so secured as it sees fit except that it cannot acquire new sites or build new buildings until it has been authorized to do so by a referendum vote of the people.

At the present time the assessed valuation of property in Springfield is one-third of the real valuation. This means that in actual fact the board of education can take each year from each \$100

worth of property \$1.00 for the support of the public schools. Of this \$1.00 it may spend 50 cents for educational purposes and the remaining 50 cents for building purposes.

In point of fact the board takes each year the full 50 cents for educational purposes and finds it scarcely enough to pay salaries and meet the running expenses of the schools. It does not, however, take for building purposes all that the law allows. Instead of asking for the full 50 cents that is permitted, it actually takes for building purposes and the payment of bonds only 15 cents. It does this through levying 37 cents for the building fund and eight cents for the payment of bonds, or a total of 45 cents on each \$100 of assessed valuation, which is equal to 15 cents on each \$100 worth of real valuation.

CURRENT EXPENSES AND PERMANENT INVESTMENT

The intent of the state law which separates the educational fund from the building fund was to draw a clear distinction between the funds that are used for running expenses—such as the

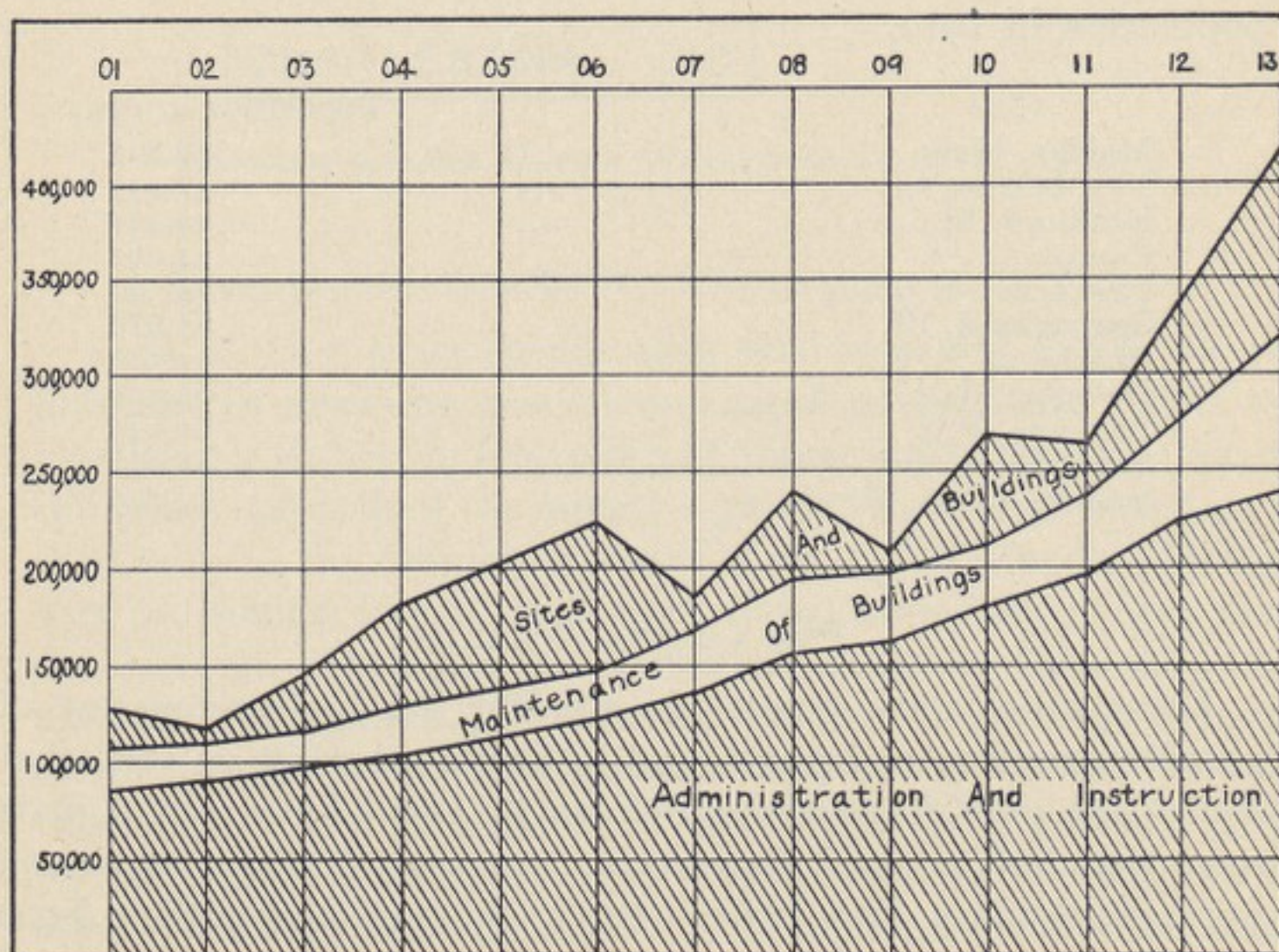


DIAGRAM 8.—AMOUNT EXPENDED FOR ADMINISTRATION AND INSTRUCTION, FOR MAINTENANCE OF BUILDINGS, AND FOR SITES AND NEW BUILDINGS, FROM 1901 TO 1913

payment of salaries, the purchase of supplies, the support of the administrative offices, and so forth—and the funds which are expended for sites and buildings and so represent a permanent investment. Each year the amount expended for educational purposes increases with the growth of population and the steadily advancing cost of education. The funds expended for building purposes on the other hand vary sharply from year to year, depending on whether or not new buildings are constructed or extensive alterations are made. These increases and fluctuations in the amount of the two funds for the past 13 years are shown in Diagram 8 in which expenditures for administration and instruction and the maintenance of buildings represent disbursements from the educational fund while expenditures for sites and buildings represent disbursements from the building fund.

HOW SPRINGFIELD COMPARES WITH OTHER CITIES

A comparison has been made of the school expenditures of Springfield with those of 10 other cities most nearly of the same population in 1912.

City	Population in 1912
Malden, Mass.....	46,805
New Britain, Ct.....	47,430
Rockford, Ill.....	49,491
Canton, O.....	54,000
Pawtucket, R. I.....	54,391
Springfield, Ill.	54,979
Charleston, S. C.....	59,509
Holyoke, Mass.....	60,418
Bayonne, N. J.....	60,649
South Bend, Ind.....	61,296
East St. Louis, Ill.....	64,296

PER CAPITA WEALTH

These cities vary greatly in wealth, the largest amount of property per capita being found in Rockford while at the other end of the list Charleston and East St. Louis have only a little more than half as much property per person. In this comparison Springfield takes fifth place with a per capita wealth a little above the average. How the 11 cities compare in per capita wealth, together with the amount of property per inhabitant, is shown in Diagram 9.

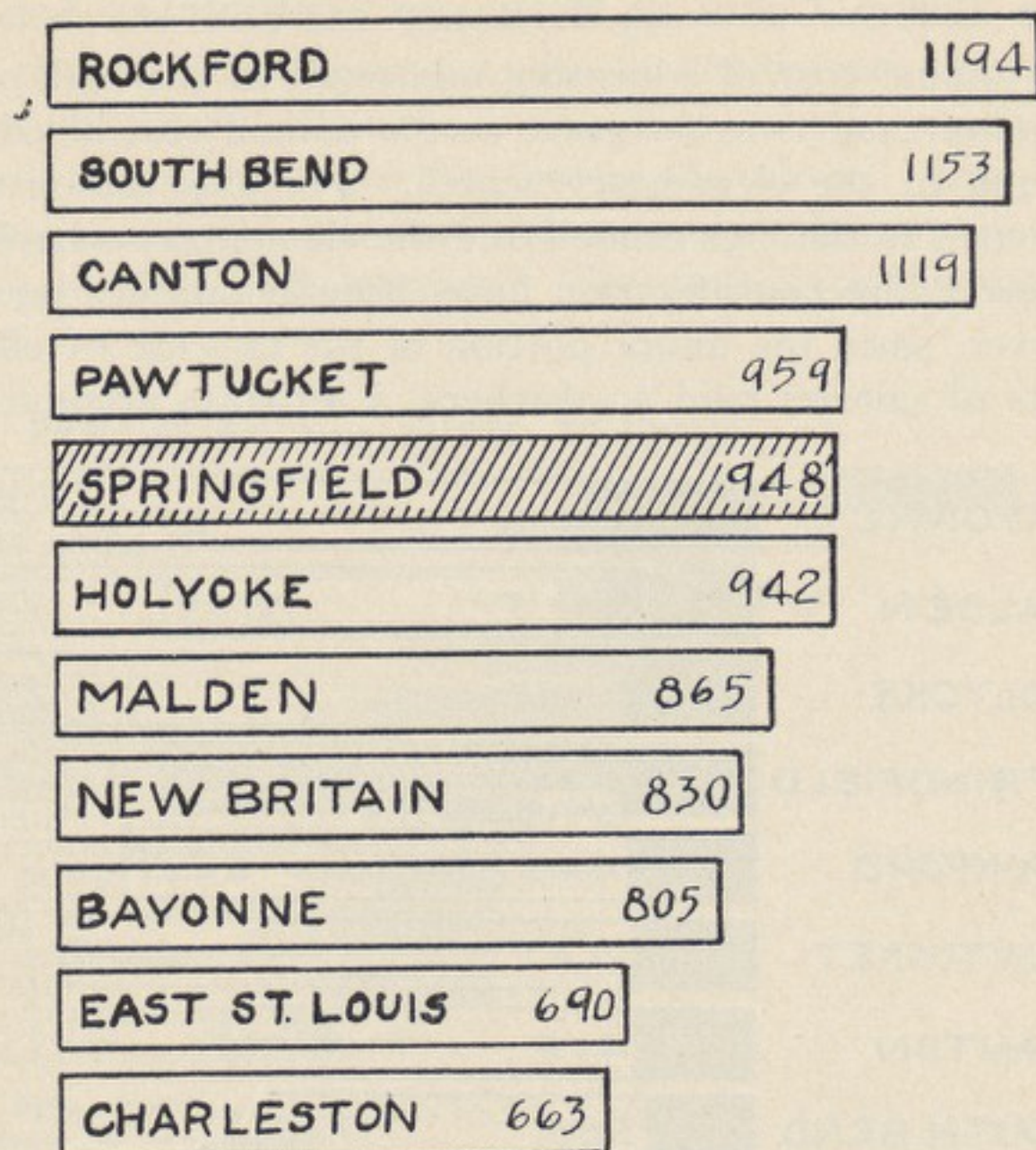


DIAGRAM 9.—PER CAPITA WEALTH IN 11 CITIES IN 1912

EXPENDITURES FOR CITY GOVERNMENT AND SCHOOLS

Each of these cities spends each year from \$15 to \$30 per inhabitant to meet the cost of municipal government. This expenditure is highest in Holyoke and lowest in Charleston. Something like one-fifth of the money expended for city government is used to meet the running expenses of the public schools although this proportion varies from more than one-fourth to less than one-seventh. Springfield is somewhat wealthier than the average city of this group, but it spends less than the average amount on its city government and ranks a little above the middle in its expenditures for the support of education. The amount spent by each city for municipal government and for the support of schools is shown in Diagram 10. The figures on which this comparison is based are taken from the report of the United States Census on Financial Statistics of Cities Having a Population of Over 30,000: 1912.

PER CAPITA COSTS IN HIGH AND ELEMENTARY SCHOOLS

The annual cost of educating one pupil in the high school is often more than twice as great as the annual cost of educating one pupil in the elementary school. For this reason the per capita costs in the high schools and the elementary schools of the 11 cities under consideration have been separately computed. Moreover, since the major portion of the expense of education consists of salaries paid to teachers, a separate accounting has

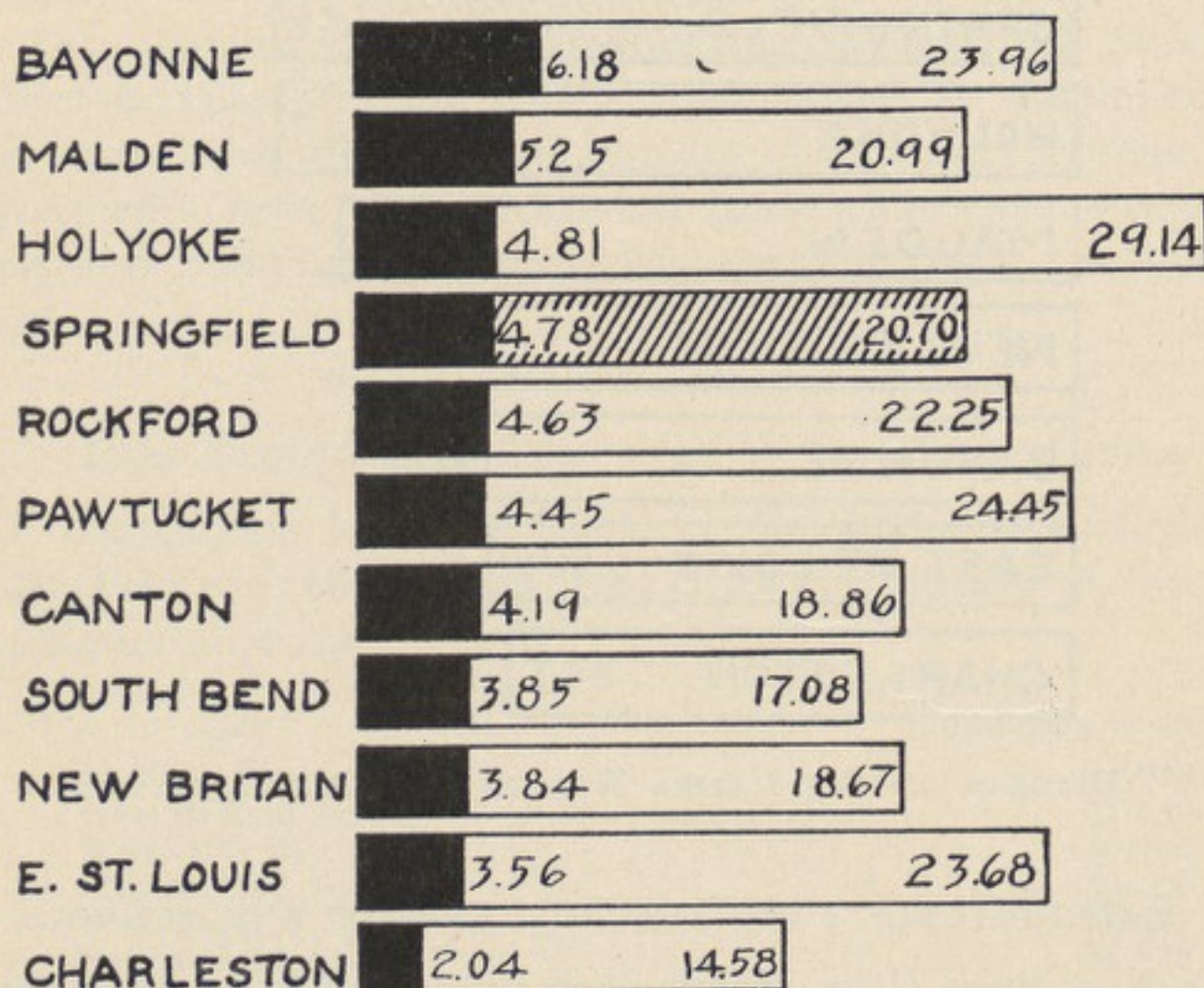


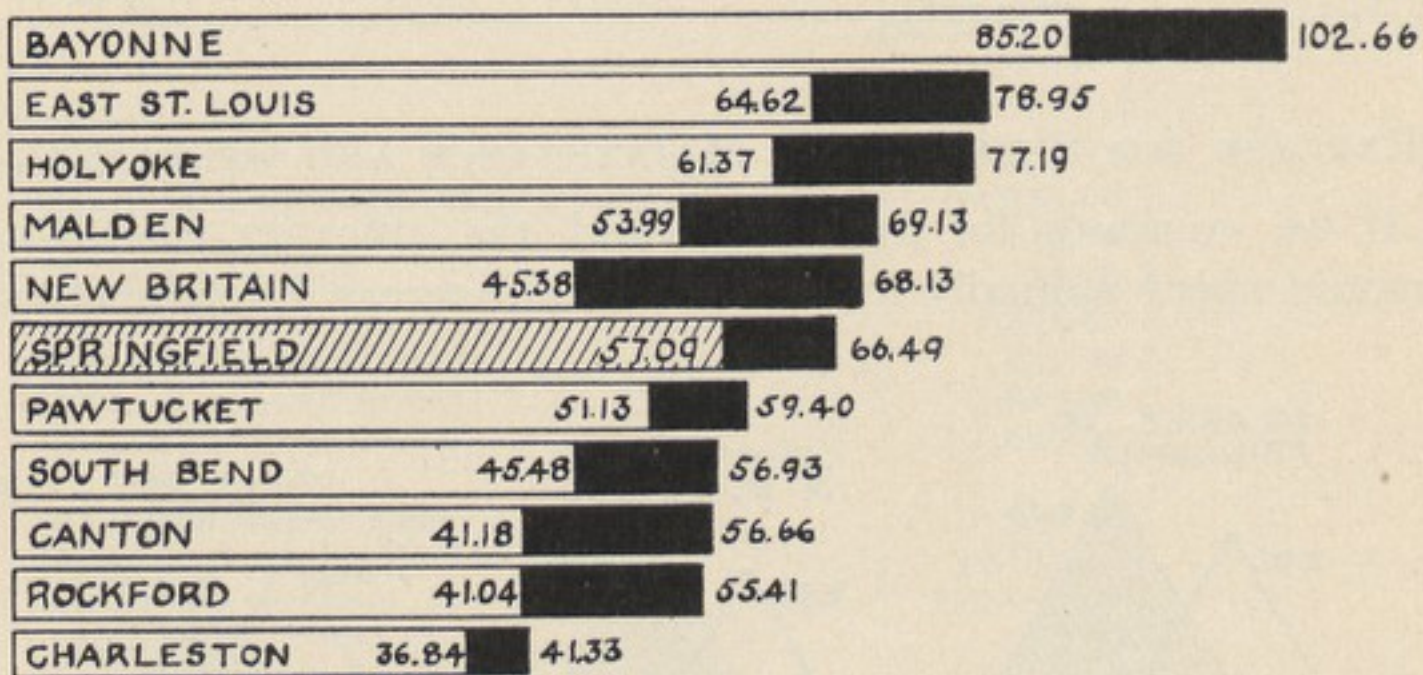
DIAGRAM 10.—BARS INDICATE ANNUAL EXPENDITURES PER INHABITANT FOR MUNICIPAL GOVERNMENT, AND BLACK PORTIONS SHOW PER CAPITA EXPENDITURES FOR RUNNING EXPENSES OF SCHOOLS IN EACH OF 11 CITIES IN 1912

been made of the cost of instruction and the expense for other purposes in each kind of school in each city. These comparisons are shown in Diagram 11 in which the upper portion shows the annual per capita expenditures for high schools and the lower portion those for elementary schools. It will be noted that Springfield occupies the middle position in the high school comparison, five of the other cities paying more each year for the schooling of each high school student, and five of them paying less.

Relatively speaking, elementary schooling in Springfield is

more expensive than the education given in the high school. Among the 11 cities Springfield is the third from the top in the per capita cost of elementary schooling and very nearly takes first rank in the expense for instruction alone. These high figures are caused by the small classes and relatively generous salaries prevailing in Springfield. The figures for this compari-

COST PER PUPIL — HIGH SCHOOLS



COST PER PUPIL — ELEMENTARY

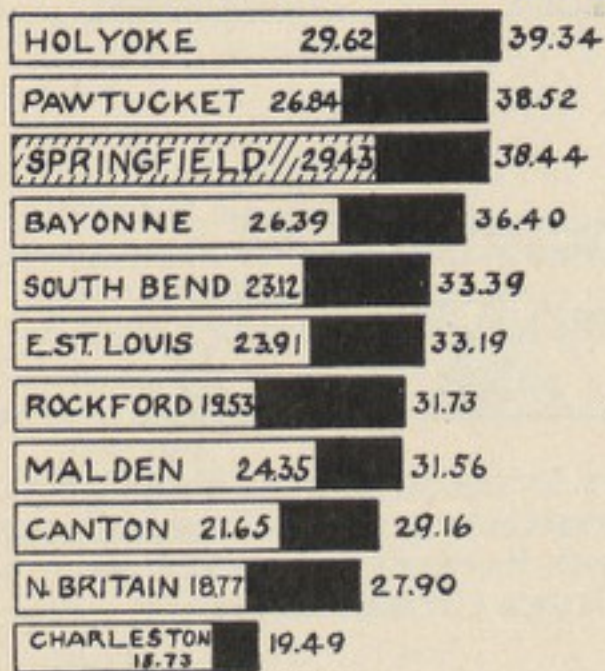


DIAGRAM II.—BARS INDICATE ANNUAL EXPENDITURES FOR RUNNING EXPENSES FOR EACH CHILD IN AVERAGE ATTENDANCE IN DAY HIGH AND ELEMENTARY SCHOOLS IN 11 CITIES IN 1911-12. PORTION IN OUTLINE REPRESENTS EXPENDITURES FOR INSTRUCTION AND THAT IN SOLID BLACK OTHER EXPENSES

son are taken from the report of the United States Commissioner of Education for 1912 for the other 10 cities, and from the Springfield accounts for 1913.

RECEIPTS AND EXPENDITURES IN DETAIL

Although most of the funds come from two sources—state grants and local taxes—and the greater part of them is expended in the payment of teachers' salaries, nevertheless small amounts of money are received from several sources and a detailed accounting of expenditures shows that disbursements fall into many classes. This is shown by the figures giving receipts and expenditures for the school year 1912-1913. These figures are presented in Table 25.

EXPENSE FOR SUPERVISION, MAINTENANCE AND OPERATION

If we compute for Springfield and the other 10 cities the amount spent annually for each child in average attendance in

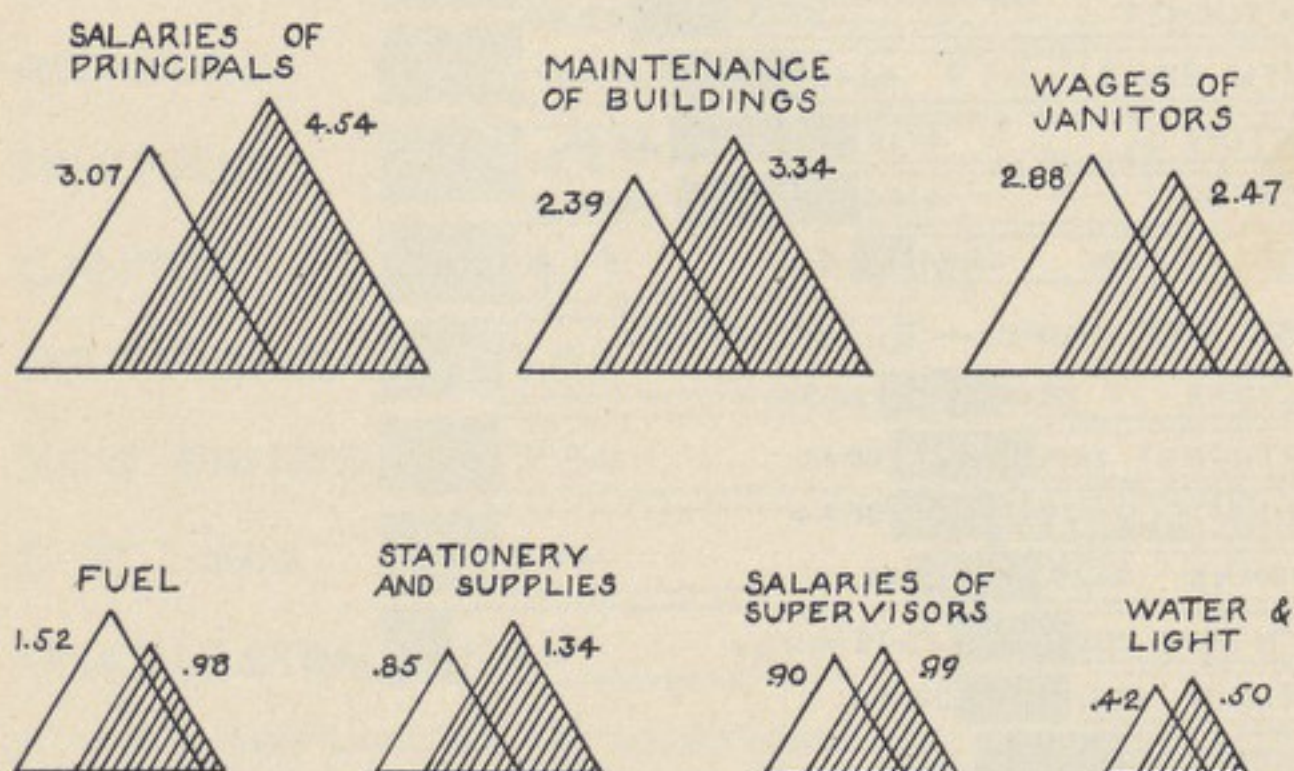


DIAGRAM 12.—SHADED TRIANGLES REPRESENT AVERAGE ANNUAL PER CAPITA EXPENSE FOR EACH CHILD IN AVERAGE ATTENDANCE IN THE DAY SCHOOLS OF SPRINGFIELD, AND TRIANGLES IN OUTLINE REPRESENT CORRESPONDING EXPENDITURES FOR THE AVERAGE OF 10 OTHER CITIES IN 1911-12

day schools for purposes other than instruction, we have a basis whereby we may compare the amount of these expenses in this city with that in the average of the other 10 cities. The results of such a comparison are shown in Diagram 12 in which the annual per capita expense for each child in average attendance in the day schools in the average city is shown by the triangle in outline, while the corresponding expense in Springfield is shown by the shaded triangle. This comparison shows that Spring-

TABLE 25.—RECEIPTS AND PAYMENTS, 1912-13

Receipts		
State school fund.....	..	\$17,414.19
General property taxes.....	..	314,788.96
Rent and interest.....	..	4,176.84
Tuition fees.....	..	2,538.50
Sales of property.....	..	2,807.40
Sales of equipment.....	..	297.28
Balance at beginning of year.....	..	264,597.87
Total.....	..	\$606,621.04
Payments		
General control		
Board of Education office.....	\$2,353.68	..
School elections.....	40.00	..
Finance accounts.....	720.00	..
Legal services.....	1,295.50	..
Operation of office building.....	730.00	..
Office of superintendent.....	3,000.00	..
Compulsory education.....	1,000.00	..
Instruction		
Salaries of supervisors.....	6,550.00	..
Salaries of principals.....	30,177.25	..
Salaries of teachers.....	169,012.99	..
Textbooks.....	325.00	..
Stationery and supplies.....	8,914.90	..
Other expenses.....	3,807.25	..
Operation of plant		
Wages of janitors.....	16,420.91	..
Fuel.....	6,519.37	..
Water.....	2,046.08	..
Light and power.....	1,268.05	..
Janitors' supplies.....	1,050.00	..
Maintenance of plant		
Repair of buildings and care of grounds....	16,276.98	..
Repair and replacement of equipment.....	5,346.11	..
Insurance.....	533.10	..
Auxiliary agencies		
Libraries.....	850.00	..
Promotion of health.....	1,434.00	..
Miscellaneous		
Rent.....	120.00	..
Permanent outlays		
Land.....	9,249.80	..
New buildings.....	85,527.91	..
Alteration of old buildings.....	20,000.00	..
New equipment of new and old buildings...	2,963.61	..
Other payments		
Redemption of bonds.....	10,500.00	..
Payments of interest.....	6,663.75	..
Total.....	\$414,696.24	..
Balance at end of year.....	191,924.80	..
Grand total.....	..	\$606,621.04

field pays more than the average city in five of the seven classes of expenditures compared and less in the other two. The per capita cost in Springfield is much greater than the average for salaries of principals, considerably larger for maintenance of buildings and the purchase of stationery and supplies, and somewhat above the average for salaries of supervisors and the purchase of water and light. On the other hand, Springfield pays less than the average for fuel.

HANDLING OF FUNDS

The system of collection and disbursement of funds is efficient in that it provides every reasonable safeguard and secures an

TABLE 26.—BALANCE OF SCHOOL FUNDS HELD BY THE COUNTY TREASURER ON THE FIRST DAY OF EACH MONTH FROM APRIL 1, 1912, TO MARCH 1, 1914, INCLUSIVE

	1912	1913	1914
February.....	..	\$9,298.39	\$9,822.88
March.....	\$35,640.92	61,919.74	33,924.56
April.....	39,376.05	49,443.14	..
May.....	60,894.42	89,261.07	..
June.....	28,452.11	79,816.42	..
July.....	27,190.73	78,584.66	..
August.....	18,063.19	85,600.06	..
September.....	19,570.60	59,105.64	..
October.....	39,570.60	65,912.55	..
November.....	48,674.09	50,912.55	..
Average.....	\$35,270.30	\$62,985.42	\$21,873.72

accurate accounting. It is deficient in that the board does not secure its own money as soon as it has been collected. The county treasurer gathers the school taxes and turns them over to the treasurer of the board of education but he does not turn them all over as soon as he collects them. What he does is to turn over to the treasurer of the board from time to time lump sums which are nearly always considerably less than the total amount of school taxes that he has on hand. This system is vicious in principle and results in the board losing the interest on part of its funds for considerable periods of time. At the end of each month every dollar of school monies collected during the month

should be delivered to the treasurer of the board. The money belongs to the board and it should be handed over to it as soon as it is available. In general the county treasurer keeps in his possession about \$50,000 of the money belonging to the board of education. During the past two years the monthly balance of school funds remaining in his hands on the first of every month ranged from \$9,000 to \$85,000. These balances are shown in Table 26.

BONDING FOR BUILDING

Up to within two years ago the school district was practically free from debt and the expense of constructing new schools was met from the building fund. According to law, the tax rate for buildings may run as high as \$1.50 for each hundred dollars of assessed valuation which would produce in Springfield about \$270,000 a year. The rate actually assessed was 55 cents on each hundred dollars assessed valuation which brought in about \$100,000 a year and is ample to meet the needs of the city in replacing and increasing its school plant. At that time the board of education decided to reduce the tax rate and borrow the money to build the new Palmer and Lincoln schools instead of paying for them out of current taxes. It is hard to justify this action on any grounds of prudent financing. It seems to have benefited nobody except the bankers who handled the funds and as the proceeds of the bond issue were left intact for many months, the benefit to the banks was very considerable. School funds should be administered for the benefit of the citizens and not of the bankers and in the case of Springfield the wisest administration demands that school buildings be erected from current funds instead of the expense being shouldered on to the future by the issuance of bonds. Diagram 13 shows the result of issuing 20-year bonds at four per cent for the erection of a school such as the new Palmer or the new Lincoln which cost \$75,000 if paid for at once but \$106,000 when paid for by such a bond issue.

Bonding is justifiable where it cannot be avoided, but in Springfield the current income from taxes if rightly administered is ample for the purpose. If anyone could foresee a time when the city would complete the development of its school system and get through with building new buildings, it might be wise to spread the payments for the last few buildings over a series of years. This situation does not exist in Springfield. One quarter of the city's school buildings are from 25 to 30 years old and they will have to be replaced within the next quarter

of a century just as certainly as the buildings that are now 50 years old can no longer be used. Moreover, the child population of the city is growing at a rate which calls for approximately five new school rooms each year and this increase alone means that a new school building will be required about every three years.

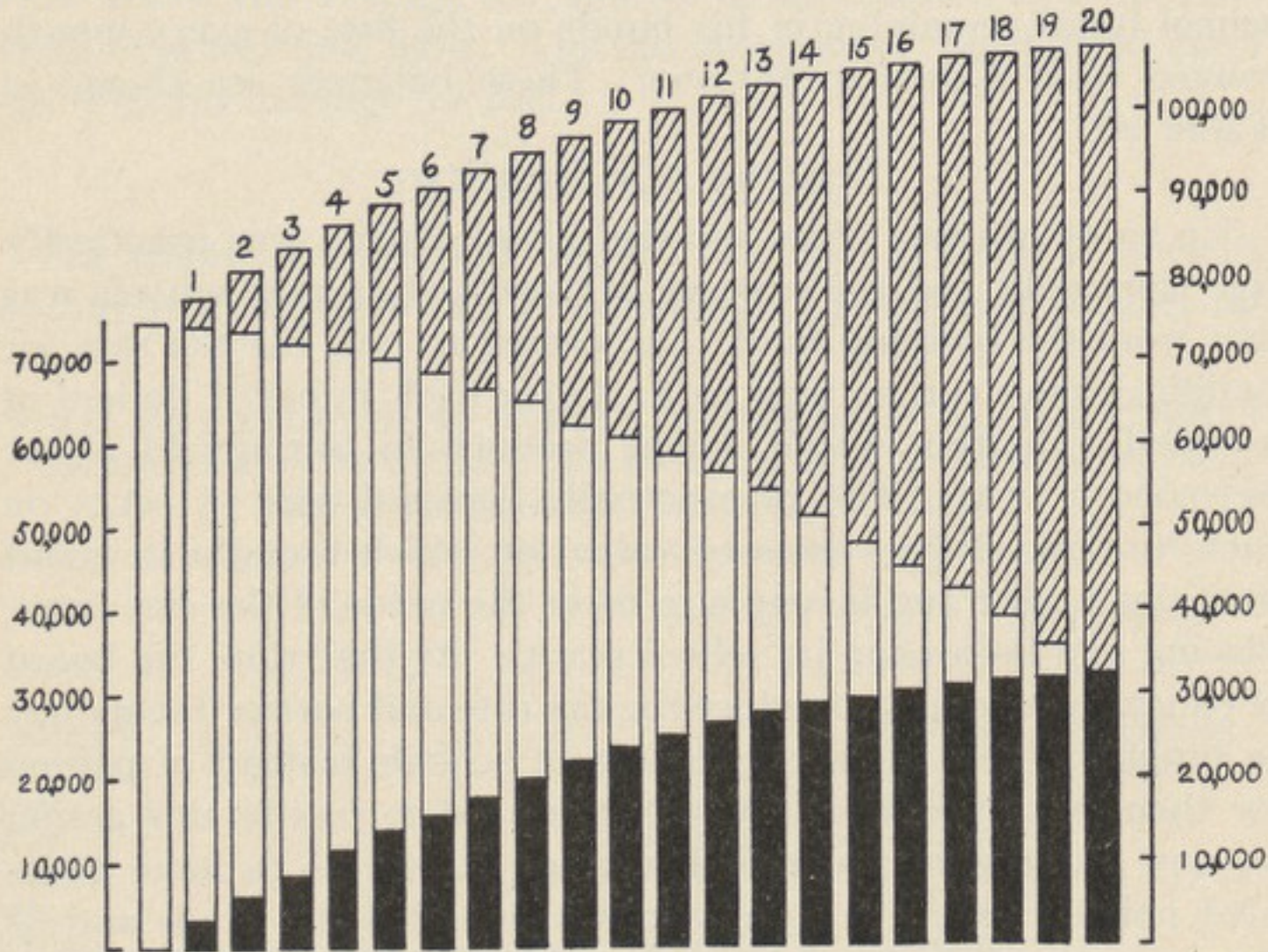


DIAGRAM 13.—COLUMNS REPRESENT MONEY TRANSACTIONS INVOLVED IN PAYING FOR A \$75,000 SCHOOL BUILDING BY ISSUING 20-YEAR FOUR PER CENT BONDS

The Portion in Outline Represents Money Secured from Bond Issue, Portion in Black Shows Interest Paid, and Shaded Portion Shows Money Paid Back to Amortize Bonds. At the End of 20 Years the \$75,000 Building Has Cost City Over \$106,000

All of these facts indicate that unless the board is to find itself intolerably burdened with debt in the future it must hold fast to the policy of paying as it goes now. It is a popular theory that future generations will benefit by the permanent improvements that we make now but in the main this theory is fallacious. Posterity will not benefit by our permanent improvements much more than we benefit by the permanent improvements of our forefathers. Most of the public improvements in this city or elsewhere made as much as 30 years ago are now so out of date that we are thinking of replacing them. A public bond issue is not merely a debt to be paid but dangerously near to a perpetual tax. In making permanent improvements by issuing bonds, we are not lending to posterity but borrowing from it.

It is greatly to be hoped that Springfield will restore the former tax rate for building purposes, stop issuing bonds, and amortize the present ones without becoming more deeply involved.

When the board takes this matter under consideration, it would also do well to consider submitting to a vote of the people a moderate advance in the tax rate for educational purposes. At present the money gathered into the educational fund is no more than sufficient to meet current salaries and other expenses. Several of the most needed improvements in the work of the schools contemplate the employment of additional people and these changes cannot readily be effected unless the amount of assessed valuation in the city be increased or the tax rate for the educational fund be made larger.

SUMMARY

1. Springfield spends on its schools about one-third of a million dollars each year, more than 90 per cent of which comes from local taxes.

2. The board of education fixes the tax rate for schools within limits imposed by the law.

3. As compared with other cities of similar size, Springfield is somewhat wealthier than the average, spends less than the average amount on city government and ranks a little above the average in its expenditures for education.

4. This city spends as much as the average city of similar size for each high school pupil and more than the average amount for each elementary pupil.

5. The per capita cost in this city is more than in the average city for salaries of principals, maintenance of buildings, purchase of stationery and supplies, salaries of supervisors, and the purchase of water and light. It is less than in the average city for the salaries of janitors and the purchase of fuel.

6. The system of collection and disbursement of funds is accurate and safe. It is deficient in that there is undue delay between the collection of tax money and its delivery to the board of education by the county treasurer.

7. It is strongly recommended that Springfield will abandon the unnecessary practice of issuing bonds for the erection of school buildings.

8. The board would do well to submit to a vote of the people a moderate advance in the tax rate for educational purposes.

CHAPTER X

MEDICAL INSPECTION

Medical inspection is carried on in the Springfield schools by one nurse who is employed by the Board of Education and given the title of Supervisor of Health. Her work in the schools consists of inspecting the children in each room for symptoms of contagious disease and during the same visit making partial physical examinations for the detection of removable defects that might handicap the children either physically or mentally. Each school is provided with an emergency medicine cabinet and each room has a card index file case for keeping the records of the physical examinations. The physical examinations consist in the main of a careful but rapid search for symptoms of adenoid growth, enlarged tonsils, decayed teeth, and eye defects. To assist in testing the vision of the children each school is provided with a set of Snellen test cards.

An attempt is made to visit all of the schools three times each year and considerable time and attention are devoted to visits to parents in order to secure their co-operation in providing medical attention for the children needing it. The nurse makes a daily report of what she has done and each month she combines these in a more formal summary report to the superintendent.

The only serious criticism of this work is that it does not go far enough. As it is conducted it is worth many times what it costs but it should be regarded merely as a beginning. The present nurse is entirely competent and thoroughly devoted to her work but it is impossible for one person to do thoroughly the amount of work that she is attempting. Springfield, with nearly 7,000 children in its public schools, should have the full-time services of at least two and preferably three nurses and in addition the half-time service of a physician.

Many hundreds of thousands of school children have been given careful physical examinations in cities throughout this country as well as in the different countries of Europe. This work has been going on for many years and the results show about what

may be expected in different sorts of communities. Judging from conditions found in the better class of resident cities in the United States, it is probable that among the 7,000 children in the public schools of Springfield physical defects exist about as follows:

50 per cent, or 3,500, have seriously defective teeth.

15 per cent, or 1,050, have or have had obstructed nasal breathing.

10 per cent, or 700, have vision defective enough to require glasses.

5 per cent, or 350, have seriously defective hearing.

2 per cent of the boys, or about 70, and $\frac{1}{2}$ per cent of the girls, or about 18, stutter or have other speech defects.

This list might be extended almost indefinitely but the foregoing is sufficient to indicate the large scope of the work which should be done for the conservation of health and the promotion of vitality among the school children of Springfield. It is because this work is so extensive and so important that at least one additional nurse and the half-time services of a competent physician should be secured to supplement the good work that is already under way.

Probably the most satisfactory way to secure the services of a competent physician would be to have the board of education co-operate with the board of health of the city in employing a municipal physician. Half of his time could be devoted to his duties as school physician and half of his salary paid by the board of education. Such an arrangement would make possible the employment of a first-class man and would materially raise the level of hygiene and sanitation throughout the city.

VACCINATION

For many years vaccination has been neglected in the city and it is not now required as a prerequisite to enrollment in the public schools. The result is that nearly three-fourths of the children are not vaccinated and the proportion is growing year by year. A census taken in the public schools in February, 1914, disclosed conditions with respect to vaccination as shown in Table 27.

This condition constitutes a danger which could be avoided by making vaccination a prerequisite to enrollment in the public schools.

DENTAL CLINIC

A school dental clinic is maintained in connection with the offices of the board of education. It is now in its third year and

is thoroughly successful. The room and equipment are provided by the board of education and the work is done by 25 local dentists who have volunteered their services. The clinic is open on Tuesday and Friday afternoons from 1:30 to 4:30 and each of the dentists serves three times during the school year. The school nurse is present while the work is going on and assists the dentist. The children who are having their teeth cared for are excused from their school work for the afternoon.

TABLE 27.—CHILDREN VACCINATED AND NUMBER AND PER CENT NOT VACCINATED IN THE PUBLIC SCHOOLS IN FEBRUARY, 1914

Grade	Vaccinated	Not vaccinated	Per cent not vaccinated
1.....	88	909	91
2.....	139	705	84
3.....	168	836	83
4.....	165	730	82
5.....	233	603	72
6.....	265	467	64
7.....	321	269	46
8.....	281	147	34
Total elementary.....	1,660	4,666	74
High School.....	735	188	20

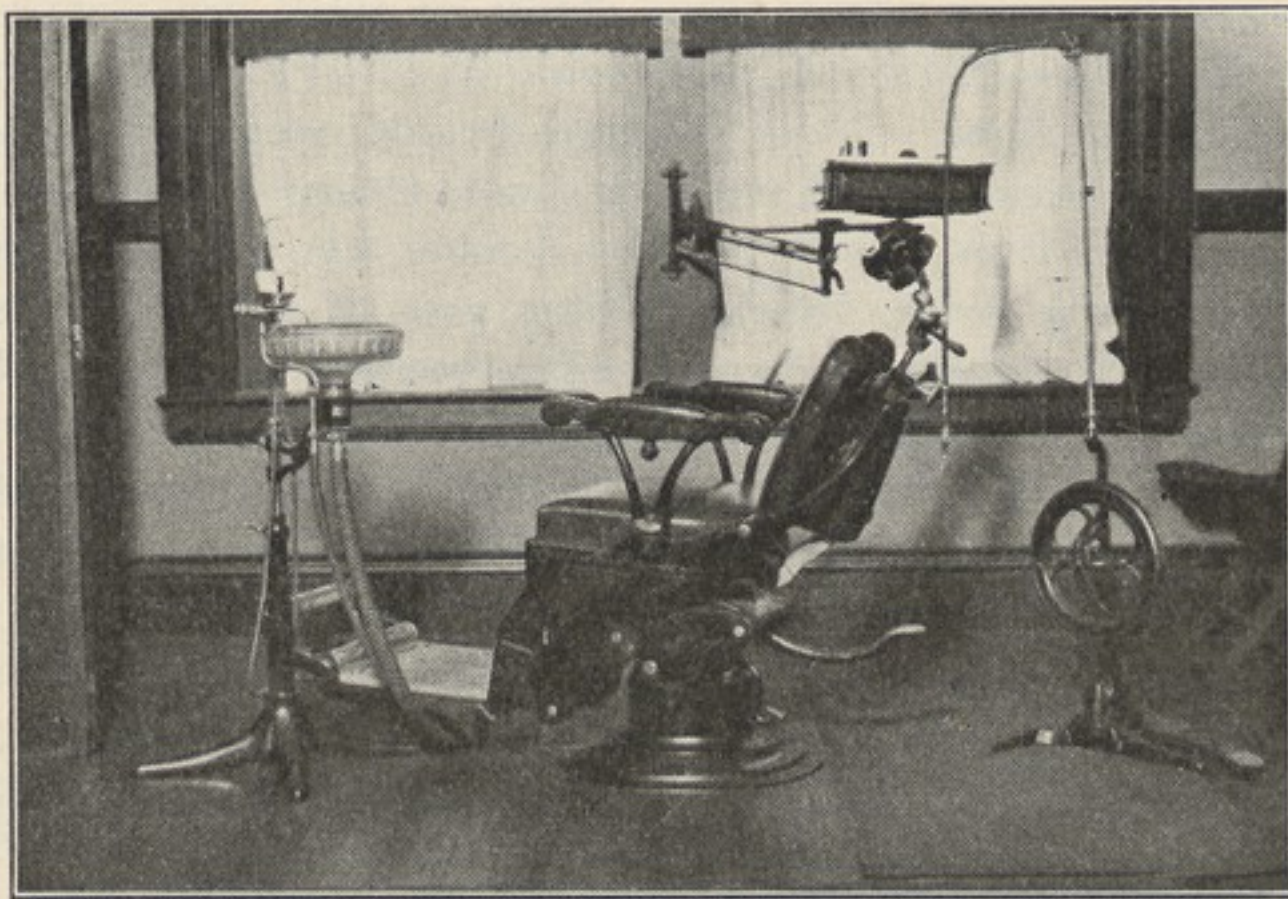
The children who receive free treatment are those who, because of family conditions, are unable to have the work performed by the family dentist. The work of the clinic is a distinct success and the community owes a debt of gratitude to the dentists who have so generously contributed their services. The work might be rendered even more effective by confining it in the main to preventive work on younger children. When teeth have become seriously decayed through continued neglect, efforts at remedying conditions are difficult and not very effective. By centering the efforts on preventive treatment among younger children and then attempting to keep all of the children's teeth in good condition during the entire school life, it would soon be found that the available efforts were sufficient to deal with the entire problem. This result can never be obtained where a large part of the work is devoted to repairing teeth that have been

allowed to get into a serious condition. Dental work is pre-eminently a field where prevention is better, cheaper, and more effective than cure.

Arrangements are now being made with oculists of the city for an eye clinic similar in principle to the dental clinic. There is every indication that these efforts will be crowned with success and should redound greatly to the benefit of the children.

CLASSES FOR EXCEPTIONAL CHILDREN

There are at least three types of exceptional children for whom provision should be made. The first class consists of children



PART OF THE EQUIPMENT OF THE DENTAL CLINIC

who are below normal in growth and nutrition and for whom open air classes are needed. Such classes are in successful operation in more than 40 cities and have repeatedly demonstrated their ability to take weak, anæmic, and sickly children and convert them within a comparatively short time into strong, healthy and normal children. There are many children in the local schools who are of the type that are promptly benefited by open air classes.

The second sort of exceptional child is the one who is below par mentally. Probably something like 1.5 per cent of the children in the city schools are so backward in their work that they cannot

properly be cared for in the regular classes. For these children special ungraded classes taught by exceptionally well qualified teachers should be established. Included in this number of backward children there is a smaller number of feeble-minded children who should not be in the public schools at all but should be cared for in state institutions. The establishment of special classes for the backward child would result in locating these feeble-minded children and would make it possible to segregate them.

The third type of exceptional children for whom special classes are needed is made up of those having speech defects. These children seem to be unusually numerous in Springfield and probably number from 150 to 200. Most of them are stutterers, more than three-fourths of whom could be cured by a few months of special teaching. These children do not need to be taught entirely in separate classes but they should receive special instruction each day from a well-qualified teacher who has had special training in this work. Such children present special problems to which parents and teachers give far too little attention. Unless something is done to help them, their affliction is apt to become incurable and while they are normal in other respects, they are almost barred from securing employment in most of the more desirable kinds of work.

SUMMARY

1. Medical inspection is carried on by one nurse. The work accomplished is well done but it is impossible for one person to do thoroughly the amount of work that she is attempting.

2. Two nurses should be employed and the half-time services of a physician secured. This could be best arranged by having the board of education co-operate with the board of health in employing a municipal physician, half of whose time could be devoted to work in the schools.

3. Nearly three-fourths of the children are not vaccinated. Vaccination should be required as a prerequisite to entrance into the public schools.

4. A most successful school dental clinic is maintained.

5. Arrangements for the establishment of an eye clinic are under way.

6. Special ungraded classes should be organized for exceptional children. A beginning should be made by establishing open air classes, classes for the mentally slow, and classes for those having speech defects.

CHAPTER XI

THE HIGH SCHOOL

The Springfield High School has 883 pupils in average attendance of whom 52 come from outside of the school district. The school is growing at the rate of about 50 pupils per year. During the past five years the average attendance has been as follows:

1910.....	674
1911.....	742
1912.....	789
1913.....	804
1914.....	883

There is every indication that the school will continue to grow and will do so even more rapidly in the future than in the past. This constitutes one of the most serious problems to be dealt with in plans for the future of the school. The distribution of boys and girls in the four classes of the school as shown by the average attendance figures for March, 1914, is presented in Table 28.

TABLE 28.—BOYS AND GIRLS BY CLASSES IN THE HIGH SCHOOL

Class	Boys	Girls	Total
I.....	151	166	317
II.....	109	143	252
III.....	72	89	161
IV.....	66	87	153
Total.....	398	485	883

Two factors of the data presented in Table 28 are particularly significant. The first is that there are many more girls than boys in the high school. For every six girls there are only five boys. In the entire school there are almost 100 less boys than girls. The second important condition revealed by the figures is that the highest class is composed of less than half as many pupils

as the entering class and that most of this great falling off takes place in the first year or two. This shows that the Springfield High School, like most other high schools, loses a large proportion of its children during the first year and another large proportion during the second year. Those who are able to survive the first two years are apt to stay to the end and graduate.

Despite the fact that most of the children stay only one or two years and that this condition has maintained ever since the high school has been in existence, the entire work of the school is planned as though all of the children who entered remained for the entire four-year course. This procedure is not economical. If most of the work of the high school is to be devoted to teaching children who remain only one or two years, it should be planned with that end in view and on the other hand if all of the work is to be planned as part of a four-year course, then every effort should be made to retain the children for the four years.

THE HIGH SCHOOL BUILDING

The student body has outgrown the high school building. Over a long series of years room after room has been equipped for school purposes in the third story of the building and in the basement until now the last available foot of floor space has been utilized. At present there are eight rooms in the third story and eight more in the basement in use as classrooms, laboratories, or shops which were never intended to be occupied by classes. Most of them are utterly unfitted for such use and cannot be remodeled so that they will properly accommodate the teachers and the young people. Several of them are so badly lighted that even on the brightest days it is necessary to use artificial light in order to conduct classes at all. It is impossible to control the heating and ventilating satisfactorily. The machine shop in the basement is so seriously overcrowded and the gears and belts so completely unprotected as to constitute a serious hazard and one that is apt to result sooner or later in severe injury to some student and heavy damage suits against the board. Every consideration of hygiene and educational policy demands that these rooms be abandoned as classrooms.

The conditions described combine to form a problem which must be solved in the very near future. This high school is rapidly growing and the building is already overcrowded so seriously that no further expansion is possible. Either extensive

additions must be built at once or a new high school constructed or some reorganization effected whereby some of the pupils may be moved to other buildings. This problem will be considered and a solution suggested in Chapter XII.

TEACHING FORCE

The teaching force of the high school consists of 39 men and women. While it includes many able instructors, it does not appear as a whole to represent as high a quality of scholarship and leadership as the city is paying for and has a right to demand. In some measure it has suffered from the same inbreeding process that so seriously handicaps the efficiency of the teaching force in the elementary schools. Among the 39 teachers in the high school, 12 are themselves graduates of the Springfield high school while 27 came from other institutions. These teachers receive salaries ranging from \$800 to \$1,400 per year with an average of \$1,065. These salaries are sufficiently generous so that the city should be able to demand that all of the members of the high school faculty should have had at least a college education and that most of them should have specialized in the subjects which they teach. Of the 39 teachers in this high school, one is not a graduate of any school, seven are graduates of high schools, six are normal school graduates, while 25 are college graduates. Moreover, while this latter group includes several instructors who are graduates of some of the best colleges and universities in the country, it also includes several teachers who, while nominally college graduates, have received their training in collegiate institutions of somewhat dubious reputation.

As is to be expected, the teaching methods of this corps of instructors range from excellent to distinctly poor. In the judgment of the members of the survey staff who observed recitations conducted by these teachers, 16 of them could be rated as good, 15 as fair, and seven as poor. The reason why so large a proportion of the work impressed the visitors as being no better than fair is that throughout the school there is a great amount of the sort of teaching that consists of assigning home lessons to be learned from books and questioning the children next day to find out how much they have retained of what they studied the night before, and how well. A considerable proportion of the teachers ask all or nearly all of their questions from the textbooks and a large proportion of this questioning is of such a

nature as to lead the pupil to give the desired answer. It seemed clear to the members of the survey staff that in general the quality of teaching in the high school is on a lower level than that in the elementary schools when both are compared with the work ordinarily observed in other cities.

COURSES OF STUDY

The high school offers four courses,—the academic or college, the English and scientific, the business, and the normal. Each of these courses is four years in length although there is a provision that certain pupils may arrange for the two-year business course. In practice no clear distinction is made between the four courses. Each pupil who is doing standard work has four recitations in four different subjects each day and when he has carried this amount of work for four years he has 16 credits which is the number required for graduation. Of these 16 credits seven are prescribed and nine are elective. Of the seven prescribed, three must be in English, two in mathematics, one in science, and one in history. Since these requirements nominally hold for all pupils and little advice or assistance is offered the young people in selecting their studies, the distinctions between the different courses are somewhat theoretical.

The subjects actually taken by the pupils are more important in showing the character of the work done than the subjects found in the course of study. A careful examination of the records of the school shows that the subjects taught fall into 10 main groups and that more than half of all the teaching done in the school is devoted to 13 subjects of English, mathematics, and science. The 10 groups of subjects, together with the per cent of all of the teaching that is included in each group, are shown in Table 29.

The figures in Table 29 show that the character of the work in the high school and the emphasis placed on the different subjects has been largely dictated by the demands of college entrance examinations. The fact is, however, that the Springfield high school is in only slight degree a college preparatory school. The number of graduates going to college is so small that the requirements of the college entrance examinations should not be permitted to influence the work of the school in more than slight

degree. The number of graduates going to college each year for the past four years has been as follows:

1910.....	18
1911.....	25
1912.....	21
1913.....	16

The cost of teaching the different subjects varies so greatly that it costs almost twice as much to give one pupil one period in the most expensive subject as it does to give him one period in the least expensive one. The relative cost of giving one student one

TABLE 29.—PER CENT OF ALL PUPIL RECITATIONS IN HIGH SCHOOL IN EACH OF 10 SUBJECTS

Subject	Per cent
English.....	22
Mathematics.....	20
Science.....	12
History.....	10
Latin.....	8
Manual Training.....	8
Domestic Science.....	7
Commercial.....	7
German.....	4
French.....	2
Total.....	100

hour of instruction per day for a school year in each of the 10 subjects is shown in Table 30.

MORE CO-OPERATION NEEDED

As the members of the survey staff visited the different classes and talked with the teachers and pupils in the high school, they were deeply impressed with a growing conviction that a fundamental change would be required to place the school in a position of true leadership in the city which it ought to claim and easily obtain but does not now occupy. While it is true that the school needs a new building and better equipment, more adequate shops and laboratories, a gymnasium and an athletic field, it does not need any of these things so badly as it needs a better spirit of co-operation within its own ranks. At present the pupils are largely

left to their own resources in the matter of electing studies. They are given little advice and guidance.

This results in the teachers competing with each other to get pupils to elect their courses, which in turn results in an undesirable rivalry between the different teachers. The effect of this is that the teachers do not co-operate with the pupils, they do not co-operate with each other, and they do not co-operate with the principal. Several of the teachers showed the members of the survey staff plans that they had drawn up for accommodations for their own departments in the contemplated additions to the

TABLE 30.—COST FOR SALARIES PER STUDENT HOUR PER YEAR IN EACH OF 10 SUBJECTS

Subject	Cost
Manual Training.....	\$13.45
Latin.....	11.63
Commercial.....	11.55
French.....	11.43
Science.....	10.43
German.....	10.35
Domestic Science.....	9.00
English.....	8.87
Mathematics.....	8.82
History.....	7.23

building. In each case each teacher had drawn plans for his or her own department without in any way taking into consideration the needs of any other department.

This year the school spent \$500 for new books for the school library. Each teacher ordered the books that she considered desirable without consulting with the librarian and so far as can be ascertained without any real consultation with any one. The librarian did not know what books were to be added to the library until they were unpacked or placed on the shelves. This is typical of the spirit that pervades the entire institution.

In connection with the work of the library, it may be said that much better results would be obtained if a trained librarian were employed, subject and author card indexes installed, and the children trained in the use of the indexes. At present the library consists of 2,700 books and the information concerning

them is mostly carried in the librarian's head. As a result the pupils get no training in making or using reference indexes.

The high school pupils do not seem to have the same respect for themselves and their school building that characterizes the elementary school pupils. The high school building is the only school house in the city that is seriously defaced either on the walls outside or in the toilet rooms inside.

There seems to be a lack of co-operation between the different teachers and the principal's office. There are no adequate records in the office to show in any unified or convenient way the significant facts about the institution as a whole or the individual children and their school records. Program making is of the most elementary sort and while most of the work is arranged on the five day basis and no attempt at a spiral program has been made, still the central office has no records whereby it can tell at any hour of the day in what rooms the different teachers can be found or what classes they are teaching. Similarly the records of the individual pupils are mostly kept by the classroom teachers and there is no way in which the central office can tell without making a special inquiry such facts about each child as age, courses taken, standing in each subject, credits earned to date, intentions with respect to college, and so forth. The clerk in the central office attributed this lack of adequate records in part to the reluctance on the part of the individual teachers to furnish the information about the children in their rooms when requested to do so.

Something of this same spirit of lack of co-operation is reflected in the way in which the pupils change from one room to another at the end of each recitation. These transfers are accompanied by considerable disturbance from running, much loud talking, and a great deal of unnecessary delay. More than a dozen of these changes were carefully watched and it was found that the time required ranged from three minutes to 12 minutes with an average of about eight minutes. There can be no excuse for this sort of dallying in so simple a matter as making the change from one room to another. In a building arranged as this one is the change ought not to take more than two minutes except perhaps in the case of pupils who have to go from the third story to the basement or vice versa.

The remedy for these conditions is not simple, for they have grown up gradually and are deep rooted. It is, however, abso-

lutely essential that a remedy be found if the high school is to yield the greatest results in citizens and scholars in return for the generous support the city affords it. Much will be accomplished toward this end when new quarters are provided and overcrowding remedied. This change will not of itself convert the high school into a truly efficient institution. Before it can become as effective as it ought to be, it must be better administered, students, teachers, and principal must be imbued with a more thorough spirit of co-operation, and the quality of classroom teaching must be improved.

SUMMARY

1. The high school has nearly 900 pupils in average attendance, of whom about 50 come from outside the city. It is growing at the rate of about 50 pupils per year. About 400 pupils are boys, and nearly 500 girls.
2. Nearly half of the pupils entering leave within two years.
3. The building is seriously overcrowded and many of the rooms are entirely unfit for classroom use.
4. The teaching force consists of 39 men and women of whom nearly one-third are graduates of the school. The salaries run from \$800 to \$1,400.
5. Of the pupils entering the school only about one in 16 goes to college which indicates that the college entrance requirements should wield less influence than they now do in shaping the courses of study.
6. The school needs better administration, more co-operation between students, teachers, and principal, and a higher quality of teaching.

CHAPTER XII

THE ORGANIZATION OF INTERMEDIATE SCHOOLS OR JUNIOR HIGH SCHOOLS

As the members of the survey staff have studied the educational problems of the city, they have become convinced that the interests of the schools can be most effectively forwarded by the organization of intermediate schools or junior high schools. At present the schools are organized, as are those of most cities, in eight elementary grades and four high school grades. Under the proposed reorganization the elementary schools would consist of the first six grades, three or four intermediate or junior high schools would be established to care for the seventh, eighth, and ninth grades, and the three highest grades would be cared for in the senior high school. Because of this division the proposed plan is sometimes referred to as the six-three-three plan. It is in successful operation in a considerable number of other cities and in accord with the most progressive educational thought and practice. There are four principal sets of reasons why it is believed that its adoption here would greatly redound to the benefit of the school system.

A SOLUTION OF THE HIGH SCHOOL PROBLEM

The first of these four reasons is that the adoption of the plan would go far toward solving the very difficult problems arising from the overcrowded condition of the high school. As has been explained in the preceding chapter, the last available space in that building has been utilized for classrooms and shop. Since the school is growing at the rate of about 50 additional pupils each year, increased accommodations in some form must be provided in the very near future. One way to do this would be to build an extensive addition to the present building. The objection to this is that the present building is not well adapted to the needs of a modern high school and cannot be made so by the erection of an addition. What is needed is not only enlarged capacity but increased efficiency.

This can be secured only by the erection of a new and modern building. When this is done the city will have on its hands the present high school building which is large and expensive to maintain but is ill-adapted and poorly located to serve as an elementary school. Any satisfactory solution of the problem must provide temporary relief from the overcrowding in the present high school until a new one is erected and also for the economic utilization of the present building.

Such a solution is offered by the new plan under which three or four of the present buildings would be converted into intermediate schools or junior high schools and would take care of all the seventh, eighth, and ninth grade pupils in the city. This would immediately relieve the overcrowded conditions in the high school.

Each of the new schools would be in the center of a group of elementary schools and as the pupils of the seventh and eighth grades of these buildings were transferred to it, those at present in the first six grades of the converted school would be transferred out to take their places.

When the new high school is erected, the present building would serve admirably for an intermediate school or junior high school. Thus the new plan provides temporary relief for the present overcrowded condition of the high school and also offers an efficient use of the present high school building after the new one is erected.

NEW PLAN EDUCATIONALLY SUPERIOR

The second reason is that the new plan is educationally superior to the present form of organization. Under it the transition from the elementary to the secondary school comes at the end of the sixth grade when most of the children are 12 or 13 years old. These are the ages at which the period of adolescence begins and during the next three years the children pass through the transition from childhood to youth. In this period their likes and dislikes, abilities and aptitudes, ideals and aspirations, undergo profound readjustment. The intermediate school has been called into existence to provide an educational transition for the intermediate period between childhood and maturity.

The present administrative division of our schools into eight elementary and four high school grades is illogical and is based on the accidents of educational history. We are the only great

modern nation that has such a division. England, Germany, France and Japan have developed systems better adapted to the psychological nature and needs of the growing child. In our own country we are beginning to see that great benefits are to be derived from a more natural adjustment of the types of schooling to the changing needs of the children and many of our cities are reorganizing their school systems according to the plan recommended for Springfield. Among the other localities where the change has been successfully made are cities as far apart as Berkeley and Los Angeles, Cal., Grafton, S. D., Columbus, O., Cokato, Minn., Chicago, Ill., Neodesha, Kans., and Concord, N. H.

Except for the concentration in four buildings, the adoption of the new plan in this city does not contemplate so profound a change as might be thought, for the upper grades of the elementary schools are now taught on the departmental plan by which the work of each teacher is largely confined to a given subject just as it is in the high schools. This plan has been in vogue in most of the schools for several years and is giving thoroughly satisfactory results. It would be continued under the proposed reorganization.

NEW PLAN HOLDS PUPILS BETTER

The third reason is that the new plan holds the pupils better than the present one. Under the new plan fewer pupils drop out of school in the sixth, seventh, and eighth grades. At present the children in the upper elementary grades resent the maternalistic atmosphere of the school. They need a different sort of treatment and a different kind of work from those needed by the smaller children and they feel this without understanding it. Many of them leave school to go to work in order to find something to do that appeals to them as more real and more worthwhile.

Those who enter high school find themselves suddenly in an entirely different sort of institution making new and unfamiliar demands upon them. This sharp break comes at the period when the child is already bewildered by his own personal struggle with unfamiliar longings and strange impulses. The result is that half of the high school pupils leave within the first two years.

The intermediate school goes far toward remedying the conditions responsible for this school mortality. The children enter

it and are well on the way toward graduation before they reach the completion of the compulsory attendance period. They are associated with children of their own ages and their school work is adapted to their needs and abilities. Under these improved conditions a far larger proportion of them complete the course and graduate. These results have been obtained in other cities and they are obtainable here.

VOCATIONAL EDUCATION MADE EASIER

The fourth reason is that the adoption of the new plan would render less difficult the problems of vocational education. The introduction of the intermediate schools or junior high schools would offer an opportunity to give all the children some insight into the problems and processes of industry through contact and participation. By bringing all these young people together in schools designed and organized for them, a far better opportunity is offered to let them experiment with varied forms of manual as well as mental activity than exists when they are scattered among the elementary schools.

SOME DETAILS OF REORGANIZATION

Four intermediate schools or junior high schools should be established in different parts of the city. The buildings needed could be made available by relatively inexpensive alterations. Each building would be in the center of a group of elementary school buildings so as to accommodate the children completing the sixth grade in these schools. In the southern part of the city the Lawrence School could be converted into the Lawrence Intermediate School or the Lawrence Junior High School and made the center of a group of schools consisting of the Edwards, Hay, and Stuart. On the east the Lincoln School could take care of the pupils of the Palmer, Bunn, Feitshans, Matheny, and Iles districts. To care for the children in the northern part of the city classes of the new type could be organized in the Ridgely School for the children of that and the Converse districts. The fourth intermediate school might well be established in the present Teachers Training School if that is suspended as has been recommended. If this were done the children to be accommodated would be drawn from the Dubois, Enos, McClernand, Douglas and Training School districts.

This reorganization would reduce the membership of the high

school from 883 to 566 on the basis of the present attendance figures. This would immediately reduce the pressure in that building and give the city time to construct a new high school building before conditions again became intolerable in the high school. As soon as the new building is constructed the present high school building should be made into an intermediate or junior high school. The classes in the Ridgely school should be transferred to the Training School and an equal number of those living near the center of the city should be accommodated in the present high school building. In addition it should take care of other pupils residing in the southern and western parts of the city and thus avoid the overcrowding of the Lawrence and Training Schools under the reorganization plan which would become serious within a year or two if not thus relieved. The new plan is not dependent for its success upon the suspension of the Teachers Training School but it would be greatly facilitated if it were possible to utilize that building for the new purpose.

The domestic science rooms and the manual training shops now located in different elementary schools should be brought together in a new intermediate or junior high school. The teaching force should be made up of the teachers who have shown most marked ability in teaching the upper grades in the elementary schools and the freshmen classes in the high school.

OPPOSITION

Three classes of opposition to the proposed reorganization must be expected. This will come in the first place from the principals of the elementary schools who are not chosen to have charge of the new intermediate or junior high schools. This opposition is inevitable but will be of brief duration. In the second place there will be opposition from the teachers of the upper grades of the elementary schools who are not qualified for positions in the new schools and from those in the high school who are transferred to service in them. This opposition is of the same sort and while it is certain to be heard, it will not last long. In the third place there must be expected opposition from parents who now have children in the lower grades of schools which are to be converted into intermediate or junior high schools and who would be compelled to send them to another and perhaps more distant school under the new plan. This opposition may be large in volume and must be seriously considered. It will dis-

appear as soon as the new schools are in operation and the pride of each neighborhood in its new acquisition overcomes the opposition of those who were at first inconvenienced by the change.

SUMMARY

1. It is recommended that the school system be reorganized so as to include intermediate schools or junior high schools which shall comprise the seventh, eighth, and ninth grades. This will leave the first six grades in the elementary schools and the three highest grades in the senior high school.

2. Such a reorganization will provide temporary relief from the overcrowding in the present high school until a new building can be erected. It also provides for the economic utilization of the present high school building.

3. The proposed plan is educationally superior to the present one because it provides a special type of schooling for the boys and girls during the period of adolescence when they most urgently need it. Schools organized as recommended are in successful operation in other countries and in many cities of this country.

4. Schools organized on the proposed plan hold their pupils better than do schools organized as they are in this city at present.

5. The adoption of the new plan would help to solve the problems of vocational education.

6. If the schools are reorganized as is recommended, some opposition from teachers, principals, and parents must be expected. This is true of every innovation but in this case it would not be either serious or of long duration.

CHAPTER XIII

VOCATIONAL EDUCATION

At present the only strictly vocational courses offered in the public schools of the city are the teachers' training course and the high school work in stenography, typewriting, and book-keeping. These courses are designed to prepare the young people directly for money earning occupations and so may properly be termed vocational.

Throughout all of the grades from the first to the eighth inclusive, work is given in manual training and domestic science and in the high school these courses are continued on a more advanced and comprehensive basis. Nevertheless, although these courses include work in sewing, cooking, carpentry, and machine shop processes, their main purpose is not direct preparation for money earning occupations, and so they are not, strictly speaking, vocational courses. In recent years interest in vocational education in Springfield has been rapidly and steadily growing and the sentiment in favor of the establishment of such courses in the public school system has become increasingly insistent. The school survey has devoted a considerable portion of its time and effort to a study of conditions in Springfield with the object of determining what course the city may most wisely pursue in respect to the growing demands for vocational education.

One considerable part of the investigations that have been made consists of a study of certain facts concerning all of the 13 year old boys and girls in the public schools, their fathers, and their older brothers and sisters. The study was confined to the children who were 13 years of age because that is the last year of compulsory school attendance and hence the last year before many of the children drop out of school. For this reason a study of the facts concerning all of the 13 year old children represents a fairly complete and unselected cross-section of all the social and industrial levels of the city's population. Moreover, since the children leave school in large numbers to go to work as soon

as they complete their 13th years, the children of that age may fairly be considered the raw material of vocational education.

Facts were gathered concerning the occupations of the older brothers and sisters to discover what sorts of occupations young people in this city actually enter. The facts concerning the fathers were gathered to discover in what groups of occupations they are engaged and also what sorts of work the city needs to have done. In all, facts were gathered concerning 373 thirteen year old boys, 358 girls of the same age, 233 older brothers less than 21 years of age who are at work, 183 older sisters of the same ages who are at work, and 655 fathers. These cases were not selected in any way. They include all of the 13 year old children in the public schools for whom the facts could be secured.

THIRTEEN YEAR OLD CHILDREN IN EACH GRADE FROM THE FIRST YEAR ELEMENTARY TO THE THIRD YEAR HIGH SCHOOL

The first data secured were those showing the school grades. The tabulation of these figures brought to light two significant facts. The first is that these boys and girls who have reached the limit of the compulsory attendance period are scattered through the grades from the first elementary to the third year of the high school. Although they are all of the same age, they represent almost every stage of school advancement and are scattered through grades normally representing 11 years of school progress—eight of the grades and three of the high school.

NEARLY HALF OF THE BOYS AND GIRLS IN SIXTH GRADE OR BELOW

The second significant fact is that nearly one-half of these boys and girls are in the sixth grade or below. Since the children who drop out of school earliest are largely those who have made slow progress and are in the lower grades at relatively advanced ages, this fact is most important. It indicates that large numbers of these boys and girls may be expected to leave school soon and go to work with an educational preparation so inadequate that they cannot enter the ranks of industry with profit either to themselves or to the community. The figures showing how these 731 boys and girls are distributed through the grades are presented in Table 31.

The figures of the table show that only about one-half of the boys and girls are within sight of completing the common school course when they reach the end of the compulsory attendance period. From the point of view of vocational education this condition is of the greatest importance. It indicates that in this city, as in many other cities, the problem of securing a reasonably complete elementary schooling for all of the children must be solved if any successful system of vocational education is to be instituted.

TABLE 31.—GRADES OF BOYS AND GIRLS 13 YEARS OLD

Grade	Boys	Girls	Total
I.....	..	1	1
2.....	..	..	..
3.....	6	1	7
4.....	20	10	30
5.....	56	41	97
6.....	90	87	177
7.....	97	121	218
8.....	79	87	166
I.....	23	9	32
II.....	1	1	2
III.....	1	..	1
Total.....	373	358	731

ONLY ONE FATHER IN SIX WAS BORN IN THIS CITY

The next facts secured were data giving the birthplaces of the children and their fathers. These figures show that only about one father in six was born in this city and that among the children only one-half were born here. These facts are significant because it is often urged that the schools develop courses of vocational education that will directly prepare the children to enter the local industries. But if present conditions maintain in the future, it appears that the great majority of adults are not going to work in the same communities in which they receive their schooling. How much this would be modified if the young people were educated for direct participation in the local industries is quite uncertain.

The Division of Education of the Russell Sage Foundation has gathered these figures concerning the birthplaces of 13 year old children and their fathers in 78 other cities and

they indicate that migration from city to city is so common among Americans that it cannot be disregarded when the problems of vocational education are under discussion. With respect to the birthplaces of the fathers and the children, conditions in Springfield are almost exactly average conditions as found in this group of 78 other cities.* The fact that even among 13 year old children one-half were born in other cities while among their fathers five out of six were born elsewhere, indicates the danger of planning any system of vocational education that will merely provide a narrowly specialized preparation for entrance into the local industries of the city. The facts suggest the desirability of a broader form of education, having for its aim the development of those sorts of general knowledge, adaptability, and resourcefulness which will be of greatest practical use in money-earning occupations. The great problem is to find out how to give such general preparation that will be of real practical vocational value. The facts as to the birthplaces of the children and their fathers are shown in Table 32.

TABLE 32.—BIRTHPLACES OF 13 YEAR OLD CHILDREN AND BIRTHPLACES OF THEIR FATHERS

Birthplace	Children		Fathers	
	Number	Per cent	Number	Per cent
Springfield.....	362	50	122	17
Other locality in Illinois.....	254	34	245	34
Other state in United States.....	79	11	221	30
Foreign country.....	36	5	143	19
Total.....	731	100	731	100

INDUSTRIES IN WHICH THE FATHERS, BROTHERS AND SISTERS WORK

The returns of the investigation showed for each of the fathers, brothers, and sisters the nature of the trade or business in which he or she was engaged and also the sort of work done within that trade or business. They also showed what each one of the boys and girls wanted to do for a living when grown up. This method

* Some Conditions Affecting Problems of Industrial Education in 78 American School Systems, Division of Education, Russell Sage Foundation.

allows a double classification of the data, first by industries, and second by occupations within the industries. The industrial classification was the one adopted by the United States Census Bureau and included the following five main divisions:

I. Industries of Extraction—Agriculture, Forestry, Mining, etc.

II. Industries of Transformation—Building Trades, Manufacturing, etc.

III. Industries of Transportation and Communication—Railroads, Telegraph, etc.

IV. Industries of Trade—Wholesale and Retail Trade, Real Estate, etc.

V. Service—Government, Professional, Domestic, Personal, etc.

The first result of the tabulation of these data was to disclose a surprisingly close agreement between the proportions of fathers

TABLE 33.—PER CENT DISTRIBUTION BY INDUSTRIAL GROUPS OF CHOICES OF 13 YEAR OLD BOYS AND PRESENT EMPLOYMENT OF BROTHERS AND FATHERS

Industrial group	Choice of boys	Work of brothers	Work of fathers
Extraction.....	14	17	22
Transformation.....	41	35	34
Transportation.....	12	17	16
Trade.....	18	21	17
Service.....	15	10	11
Total.....	100	100	100

and working brothers engaged in each class of industry and the proportion of the boys who wished to enter those same industrial groups. The results are shown in Table 33 in which the figures represent the percentages of boys who desire to enter each industrial group and the proportion of brothers and fathers already engaged in those groups.

The figures in Table 33 do not indicate that most of the individual boys wish to enter the same specific occupations as their fathers and brothers. What they do indicate is that in general there is substantial agreement in the proportions of boys desiring to enter occupations within the five broad industrial classifica-

tions and the percentages of brothers and fathers already engaged in occupations of the general nature indicated.

When the figures for the girls and their older sisters were tabulated, it was found that no such agreement existed. In general the girls wished to enter occupations of an entirely different class from those in which their older sisters are already engaged.

ASPIRATIONS OF YOUTH FAR BEYOND REALIZATIONS OF MATURITY

A close analysis of the figures showing the occupations chosen by the boys and girls and those in which their brothers, sisters, and fathers are actually engaged, shows that the aspirations of the young people are for types of life work far in advance of those to which their brothers, sisters, and fathers have succeeded in attaining. The same condition maintains with respect to the kind and amount of education that the boys and girls hope to secure compared with the education that young people in Springfield actually do secure.

The contrast between what the boys and girls wish to do and what their older relatives are actually doing is readily illustrated by the data secured. Fifteen of the boys wish to be civil engineers whereas only one father is engaged in that profession. Twenty-six of them desire to become electricians or electrical engineers but there are only two fathers so engaged. Seventy-six of the girls wish to become teachers but only five of their older sisters have entered that profession. Seventy-one of them have chosen stenography as a life work but only 14 of their sisters have entered the occupation. Ninety-one per cent of the boys and girls state that they intend to enter high school but we know that probably less than 45 per cent will succeed in doing it. Twenty-four per cent of them intend to go to college but it is probable that not more than three per cent, or one-eighth as many, will succeed in getting there.

Table 34 shows in detail the number of boys choosing each occupation as his intended life work together with the number of fathers and older brothers of these boys actually engaged in each occupation. Corresponding figures for the girls and their older sisters are given in Table 35.

TABLE 34.—OCCUPATIONAL CHOICES OF BOYS AND OCCUPATIONS OF FATHERS AND OLDER BROTHERS

Occupation	Boys choosing	Fathers employed	Brothers employed
Farmers.....	40	21	10
Machinists.....	26	17	5
Electricians.....	26	2	..
Retail merchants.....	22	30	..
Locomotive engineers.....	19	11	..
Bookkeepers.....	19	4	1
Lawyers.....	17	9	..
Civil engineers.....	15	1	..
Retail clerks.....	12	17	27
Carpenters.....	10	30	3
Doctors.....	9	..	..
Factory hands.....	7	38	38
Miners.....	5	97	24
Traveling salesmen.....	5	26	2
Plumbers.....	5	5	..
Architects.....	5	..	..
Stenographers.....	5	..	3
Teamsters.....	4	18	25
Butchers.....	4	3	1
Stationary engineers.....	3	13	..
Office clerks.....	3	8	13
Manufacturers.....	3	5	..
Blacksmiths.....	3	4	1
Teachers.....	3	3	1
Porters.....	3	3	2
Bakers.....	3	1	..
Musicians.....	3	..	..
Train despatchers.....	2	5	..
Street car conductors.....	2	4	..
Laundry owners.....	2	3	..
Pattern makers.....	2	3	2
Florists.....	2	2	..
Printers.....	2	1	5
Artists.....	2	..	..
Aviators.....	2	..	..
Managers and superintendents..	1	14	1
Barbers.....	1	7	1
Contractors and builders.....	1	16	..
Railroad foremen.....	1	6	..
Restaurant owners.....	1	5	..
Mail carriers.....	1	4	..
Brakemen.....	1	4	..
Linemen.....	1	4	..
Tailors.....	1	3	3
Molders.....	1	3	1
Shoemakers.....	1	3	1
Hostlers.....	1	3	2
City firemen.....	1	2	..
Sign writers.....	1	1	..
Plasterers and paperhangers...	1	1	1
Chauffeurs.....	1	1	..
Bankers.....	1	1	..
Commission merchants.....	1	1	..
Dairymen.....	1	1	..
Undertakers.....	1	1	..
Stereotypers.....	1	1	..
Dentists.....	1	1	..
Harness makers.....	1	..	..
Politicians.....	1	..	..
Baseball players.....	1	..	..
Soldiers.....	1	..	..
Waiters.....	1	..	3
Window trimmers.....	1	..	..
Learn some trade.....	1	..	..
Laborers.....	..	24	4
Painters.....	..	12	1
Factory foremen.....	..	12	..
Insurance agents.....	..	11	..
Factory firemen.....	..	7	..
Motormen.....	..	7	..
Hod carriers.....	..	6	..

TABLE 34 (Continued).—OCCUPATIONAL CHOICES OF BOYS AND OCCUPATIONS OF FATHERS AND OLDER BROTHERS

Occupation	Boys choosing	Fathers employed	Brothers employed
Saloon keepers.....	..	6	..
Agents.....	..	4	..
Janitors.....	..	4	..
Gardeners.....	..	4	5
Locomotive firemen.....	..	4	..
Railroad yardmasters.....	..	4	1
Switchmen.....	..	4	..
Boiler makers.....	..	4	2
Bricklayers.....	..	4	..
Real estate business.....	..	4	..
State officers.....	..	4	..
Railroad conductors.....	..	3	..
Grain dealers.....	..	3	..
Cement finishers.....	..	3	..
Bar tenders.....	..	3	..
Opticians.....	..	3	..
Watchmen.....	..	3	1
County officers.....	..	2	..
Policemen.....	..	2	..
Stone cutters.....	..	2	..
Baggage men.....	..	2	..
Mine operators.....	..	2	..
Mine examiners.....	..	2	..
Timekeepers.....	..	2	..
Clergymen.....	..	2	..
Switchboard experts.....	..	1	..
Lathers.....	..	1	2
Excavators.....	..	1	..
House movers.....	..	1	1
Meter repairers.....	..	1	..
Upholsterers.....	..	1	..
Cabinet makers.....	..	1	..
Tinsmiths.....	..	1	..
Photographers.....	..	1	..
Actors.....	..	1	..
Chefs.....	..	1	..
Carpet layers.....	..	1	..
Rodmen.....	..	1	..
Estimator, lumber company.....	..	1	..
Owner livery stable.....	..	1	..
Railroad expressmen.....	..	1	..
Collectors.....	..	1	1
Mine check weighers.....	..	1	..
Mine foremen.....	..	1	..
Stockmen.....	..	1	..
Abstractors of titles.....	..	1	..
Elevator men.....	..	1	3
Peddlers.....	..	1	..
Newspaper solicitors.....	..	1	..
Proof readers.....	..	1	..
Reporters.....	..	1	1
Gas meter inspectors.....	..	1	..
Street paving contractors.....	..	1	..
Car inspectors.....	..	1	1
Office boys.....	6
Bundle boys.....	6
Messengers.....	4
Hotel and restaurant clerks.....	2
Moving picture operators.....	2
Railroad signal men.....	2
Bowling alley employes.....	1
Prize fighters.....	1
Theatre employes.....	1
Servants.....	1
Showmen.....	1
Mail clerks.....	1
Draftsmen.....	1
Apprentices tile factory.....	1
Apprentices planing mill.....	1
Apprentices bookbindery.....	1
Glaziers.....	1
Total.....	324	655	233

OCCUPATIONAL CHOICES INDICATE NATURE OF VOCATIONAL TRAINING NEEDED

All of the facts that have been reviewed tend to indicate that the choices of the boys are fairly reliable indicators as to the general nature of the occupations among which they will eventually be distributed. The choices do not, however, furnish a

TABLE 35.—OCCUPATIONAL CHOICES OF GIRLS AND OCCUPATIONS
OF OLDER SISTERS

Occupation	Choice of girls	Sisters employed
School teachers.....	76	5
Stenographers.....	71	14
Music teachers.....	26	..
Keep house.....	23	40
Dressmakers.....	16	..
Nurses.....	15	1
Bookkeepers.....	13	3
Retail clerks.....	11	16
Milliners.....	11	1
Musicians.....	6	2
Factory work.....	6	54
Servants.....	4	19
Artists.....	2	..
Office work.....	2	7
Writers.....	2	..
Librarians.....	2	..
Traveling saleswomen.....	2	..
Telephone operators.....	1	9
Moving picture actresses.....	1	..
Lawyers.....	1	..
Elocutionists.....	1	..
Hair-dressers.....	1	..
Business women.....	1	..
Cashiers.....	..	4
Waitresses.....	..	4
Laundry work.....	..	3
Solicitor for pianos.....	..	1

safe guide as to the specific occupation that each individual will go into. Undoubtedly many changes will be made as the boys grow older, their preferences become more fully developed, and they are brought in contact with different sorts of opportunities. As guides for the formulation of courses of vocational education, the choices of the boys appear to be reliable in general and unreliable in detail. On the other hand, the choices of the girls

are apparently untrustworthy, both in general and in detail. Among boys and girls alike the tendency is to aim toward occupations that require more training and are rewarded with higher salaries than they will probably succeed in securing.

If the school system is to assist young people to prepare themselves for money-earning occupations, it must carefully consider the sorts of occupations that these young people wish to enter. It cannot successfully do otherwise and if it could, it ought not to. The object of public education is to equip each child with the knowledge and training that will equip him to make the most adequate use of his innate abilities. When public education enters the field of training for vocations, its main concern is still the individual and not the industry. Its efforts must be directed toward improving the producer and his quality rather than toward increasing the product and its quantity. Each individual has an inalienable right to participate in shaping his own destiny and the school cannot and should not attempt to sort the children out according to their industrial destinations.

These are the reasons why we must give careful consideration to the choices of these boys and girls. While steadfastly bearing in mind that boys and girls who are 13 years old are not yet generally competent to foresee just what sorts of life work they will eventually wish to enter, we must remember that these choices are the best guides that we have for determining the objectives of our courses and that in so far as the boys are concerned, there is large agreement between the sorts of occupations chosen and those in which fathers and brothers are actually engaged. This agreement is very close indeed if we group the choices of the boys and the occupations of the fathers and brothers in the broad industrial classifications and a fair amount of agreement is found when we make the classifications by individual occupations. Our next step then is to analyze the specific occupations when the boys and girls say they wish to enter and decide what is the wisest course that the schools can follow in the attempt to help each boy and girl make the best use of his or her abilities, aptitudes, and aspirations.

By consulting Tables 34 and 35 it will be seen that the choices of most of the boys and girls cluster about a relatively small number of occupations and particularly in the case of the boys it will be found that in general these occupations are those in which considerable numbers of older relatives are engaged. Hence it seems wise to simplify our problem by confining our considera-

tions of possible types of vocational education to those occupations which have been chosen by at least one boy or girl in each hundred. It is evident that the line must be drawn somewhere for certainly a city of the size of this one cannot undertake to establish separate courses for training in each sort of occupation.

Among more than 300 boys who registered their desires are found individuals who wish to enter such vocations as those of the banker, soldier, baseball player, aviator, and undertaker,

TABLE 36.—OCCUPATIONS CHOSEN BY MORE THAN ONE BOY OR GIRL IN EACH ONE HUNDRED BOYS OR GIRLS

Boys		Girls	
Occupation	Number	Occupation	Number
Farmers.....	40	School teachers.....	76
Machinists.....	26	Stenographers.....	71
Electricians.....	26	Music teachers.....	32
Retail merchants.....	22	Keep house.....	23
Locomotive engineers.....	19	Dressmakers.....	16
Bookkeepers.....	19	Nurses.....	15
Lawyers.....	17	Bookkeepers.....	13
Civil engineers.....	15	Retail clerks.....	11
Clerks.....	15	Milliners.....	11
Carpenters.....	10	Factory work.....	6
Factory hands.....	7	Servants.....	4
Stenographers.....	5		
Architects.....	5		
Miners.....	5		
Traveling salesmen.....	5		
Plumbers.....	5		
Butchers.....	4		
Teamsters.....	4		
Musicians.....	3		
Stationary engineers.....	3		
Train dispatchers.....	3		
Blacksmiths.....	3		
Porters.....	3		
Bakers.....	3		

while among the girls some wish to become elocutionists, hair-dressers, and moving picture actresses. Clearly the city cannot undertake to meet all these individual desires by the establishment of separate training courses. But the choices show that the great majority of the young people are agreed in desiring to prepare themselves for a relatively small number of occupations. If we include all of the occupations chosen by more than one person in one hundred we shall have 24 for the boys and 11 for the girls as shown in Table 36.

PROFESSIONAL, COMMERCIAL, AND INDUSTRIAL PREPARATION

We have in Table 36 the choices of 267 boys scattered among 24 occupations and those of 278 girls among 11 occupations and these figures represent the choices of nearly 90 per cent of all the boys and girls. From an educational point of view these occupational choices can with fair accuracy be classified under three heads depending on whether the training required is professional, commercial, or industrial in nature. This classification is shown in Table 37.

The figures of Table 37 leave unclassified among the boys four who desire to become teamsters, four who wish to be butchers, and three who say they want to become porters, and among the girls 23 who wish to keep house and four who choose to be servants. Omitting these as not fitting into our scheme of classification, we may summarize the choices of the boys and girls as follows:

	Boys	Girls
Requiring professional preparation.....	40	123
Requiring commercial preparation.....	61	95
Requiring industrial preparation.....	150	33

The college preparatory courses of the high school already open the gates of opportunity to those who desire to secure a professional education, while the business courses offer training for those who desire to go into commercial activities. Again, the existing courses in the high school in large measure offer preparation for girls in the particular sorts of industrial work which most of these girls have chosen. This leaves as our largest problem that of providing vocational education for substantially half of the boys.

SEPARATE COURSES FOR EACH OCCUPATION IMPOSSIBLE

There are 12 occupations which we have classed as requiring industrial preparation and in that group have been included some which hardly belong there, such as the farmers and perhaps the bakers. It is evident that the city cannot now undertake to establish 12 separate sorts of new courses or schools to train boys for these occupations. The complexity of the undertaking and the expense which would be entailed render it impossible. To undertake thorough training for such diverse occupations as those of the farmer and the locomotive engineer, the miner and the baker, would necessitate an equipment in buildings, appa-

TABLE 37.—OCCUPATIONAL CHOICES OF BOYS AND GIRLS CLASSIFIED AS REQUIRING PROFESSIONAL, COMMERCIAL, OR INDUSTRIAL PREPARATION

A. PROFESSIONAL			
Boys		Girls	
Occupation	Number	Occupation	Number
Lawyers.....	17	Teachers.....	76
Civil engineers.....	15	Musicians.....	32
Architects.....	5	Nurses.....	15
Musicians.....	3		
Total.....	40		123
B. COMMERCIAL			
Boys		Girls	
Occupation	Number	Occupation	Number
Merchants.....	22	Stenographers.....	71
Bookkeepers.....	19	Bookkeepers.....	13
Clerks.....	15	Clerks.....	11
Salesmen.....	5		
Total.....	61		95
C. INDUSTRIAL			
Boys		Girls	
Occupation	Number	Occupation	Number
Farmers.....	40	Dressmakers.....	16
Machinists.....	26	Milliners.....	11
Electricians.....	26	Factory work.....	6
Locomotive engineers.....	19		
Carpenters.....	10		
Factory hands.....	7		
Miners.....	5		
Plumbers.....	5		
Stationary engineers.....	3		
Train dispatchers.....	3		
Blacksmiths.....	3		
Bakers.....	3		
Total.....	150		33

tus, and teachers such as the city could not at this time meet even if it were sure of the desirability of attempting to do so.

GENERAL INDUSTRIAL PREPARATION

Since substantially one-half of the boys intend to enter and probably will enter industrial occupations, and since the city cannot undertake to prepare directly for each separate kind of occupation, the question which presents itself is whether or not some general industrial education can be devised which will be of real practical value to these boys who are just entering the high school ages.

It is the opinion of the members of the survey staff that such a form of education is both possible and practical and that it does not consist of a mere extension of the manual training work now done in the wood-working shops in the elementary schools and the carpenter shop and machine shop in the high school. The main defect of this work is that it is not real. It is largely made up of problems conceived or invented to fit into a scheme of development that exists rather in the mind of the person arranging the course than in the interests of youth or the requirements of real life. While working with tools and participating in the activity of the shop comes as a relief to the boy who has long been required to sit quietly in the classroom, still he is not really interested in making such things as the Springfield course of study arranges for him to make. The pen rack and envelope rack, the whisk-broom holder and toothpick holder, the sleeve board and towel roller, the glove box, the taboret, and the wooden candlestick, hold no vital place in the interests of the 15 year old boy nor does their making prepare him in more than slight degree for participation in any industrial activity. This is particularly true when these and other similar objects are made according to a series of explicit directions which are formal, inelastic, uniform, and prescriptive and take little or no account of the individuality of either the pupil or the teacher.

Such work is common here as elsewhere. It excuses both teacher and pupil from opportunity or necessity for originating devices and meeting unforeseen difficulties and it does not require that the work produced shall be of such a quality that the article shall be able to meet any definite demand of service. There is a general conviction that all hand work done in schools must be good merely because it is hand work, but the truth is that a

large part of it is as formal, as inelastic, and as far removed from the real problems of life as is the most abstract lesson in grammar or mathematics. For these reasons it is not recommended that the solution of this problem be sought through the extension of the manual training and shop work now being given in the schools.

A PLAN FOR PREPARATORY INDUSTRIAL EDUCATION

In former years young people gained their most useful education through doing the chores of the home and the farm. Here they were brought into contact with a large range of industrial operations and they developed a most adaptable sort of skill and knowledge in the handling of materials. Today a more highly organized and specialized civilization is taking away most of these chores and with them much that is best in the training of youth.

But Springfield has chores to do within its public school system. It has buildings to be altered, painted, and repaired, systems of heating and ventilating to be installed or changed, and electric wiring for lights and bells to be put in and kept in order. The community has chores to do and these chores are of precisely the sort to make them educationally valuable. They are diversified and real, dealing with many kinds of materials and involving the application of the simpler processes of the machine and building trades. Since the community has chores to do and it has boys and girls who need to do chores, why not put them together?

Each year the city spends more than \$20,000 on the maintenance of its school buildings. The plan proposed is that these repairs and alterations be made the material for industrial education. They involve the work of the carpenter, mason, electrician, tinsmith, machinist, blacksmith, painter, plumber, and steamfitter. In former days the boy on the farm received a large part of his education through helping the hired man to do any of a hundred different sorts of tasks. In the earlier days of our industrial development the boys mastered their trades and crafts by passing through a period of apprenticeship in which they helped a skilled artisan and gradually mastered the practice of his craft.

What is here proposed is that Springfield abandon the formal teaching of series of exercises in her school shops and substitute instead the doing of short pieces of real work on the school buildings and grounds under the direction of skilled journeymen-artisans permanently employed by the department of education

to make repairs and alterations. It is not necessary that these men should be trained teachers. They should be skilled artisans, of good character, who use good English and like boys. The work done should be the regular work required for the maintenance and repair of the school plant. The classes should be small, consisting of only from three to five boys for each mechanic and all attempt to fit the work into any preconceived series of exercises should be abandoned. Of course the work itself should be of thoroughly good quality and a large part of its educative value would arise from the fact that each portion of it would be entirely genuine and not accepted unless it was a finished product. Such work as this would make constructive use of the adventurous spirit of youth, lead the boys to appreciate through contact and participation the hard basis of humanity's dependence on nature, and develop the ability of co-operation for the common good.

As a feature of the practical character of the work, each portion undertaken would carry its own cost accounting sheet and the financial records of all the work done would constitute a large portion of the work of the commercial courses.

AN ECONOMICAL PLAN

The plan that has been proposed is probably the only feasible solution for bringing to the children of Springfield the benefits of vocational education without entailing greatly increased expenditures. The work proposed would be centered in the intermediate schools and the senior high school. In the intermediate schools it would be required of all boys but in the senior high school it would probably be made elective, at least in the two upper classes. It would take the place of the manual training work now carried on in the elementary and the high schools and the artisans employed would do the work incident to the maintenance of the school plant.

The present expense of the manual training work in salaries and supplies is something more than \$9,000 per year while that of maintenance of buildings is more than \$22,000. This means that a considerable portion of \$30,000 would be available for carrying on the type of vocational education proposed without any increase of appropriations. Moreover, the plan has the important added advantage that most of the expenses would be defrayed from the building fund in which there is an ample

margin of resources rather than from the educational fund which is already overburdened.

FUTURE EXTENSIONS AND ADDITIONS

The plan outlined is neither complete nor exclusive. It is capable of extension along many lines and it may be carried on together with other forms of vocational education such, for example, as some of those now offered in the evening schools. Again if this form of industrial education were carried on it would in no way interfere with the establishment of continuation classes for young people already at work or part time classes for high school pupils.

The possible extensions and variations of the plans are numerous. Some of the simpler portions of the work of the city's hospitals and children's institutions might well be undertaken by the older girls. Again school garden work and the planting and care of park areas in school grounds offers the possibility of much valuable training for both boys and girls. Still another form of activity might well be furnished by the making and erection of playground apparatus for school playgrounds. Other possibilities may readily be foreseen and it is certain that still more would shortly present themselves after the plan had been put into operation.

SUMMARY

1. At present the boys and girls, upon reaching the limit of the compulsory attendance period, are scattered throughout the grades of the elementary and high schools. Nearly half of them are in the sixth grade or below. The problem of securing a reasonably complete elementary schooling for all these children is part of the problem of instituting vocational education.

2. Among the fathers of these children only one in six was born in this city and of the children only one-half were born here. This indicates that narrowly specialized preparation for specific industries will not solve the problem of vocational education.

3. The children in school aspire to types of life work far in advance of those to which their brothers, sisters, and fathers have succeeded in attaining. They also hope to secure far more schooling than it is probable that they will be able to secure.

4. The statements of the boys as to life work which they hope to enter appear to be reliable in general and unreliable in detail as guides for the formulation of courses of vocational education.

The choices of the girls are of less value both in general and in detail.

5. An analysis of the available data indicates that most of the girls and substantially half of the boys desire to enter occupations for which the schools already offer somewhat adequate preparatory training.

6. About one-half of the boys desire to enter industrial work for which general industrial preparation can be given.

7. It is recommended that the city establish courses of preparatory industrial training in its junior and senior high schools through utilizing for educational purposes the work that is incidental to the maintenance of the public schools.

8. This work can be instituted at slight expense and the major part of its cost can be defrayed from the building fund.

CHAPTER XIV

EDUCATIONAL EXTENSION

The school plant of this city represents an investment of more than \$1,000,000. It is in use less than one-eighth of the time. No one would be so foolish as to argue that it could be profitably used every hour of the day and every day in the year, but there is little doubt that the community could profitably secure more service from these costly buildings and extensive grounds. In the evenings, on Saturdays, and during the summer months the school buildings and grounds can be made to serve the community in more ways and for a greater proportion of the time than they do at present.

PRESENT WIDER USE ACTIVITIES

Already Springfield has done more than most cities to utilize her school buildings. The records show that during February, March, and April of the present year the school buildings have been used 73 times for public purposes other than teaching. There have been 13 afternoon meetings of patrons' clubs, 26 lectures or entertainments, five first-aid classes conducted by the State Mine Rescue Commission, and 23 neighborhood meetings. In addition school buildings have been used six times for registration and polling places. This record is a distinctly creditable one and indicates lines along which further progress may well be made.

EVENING SCHOOLS

For several years classes in elementary subjects have been conducted in the evening. They have been largely attended by foreign-born young people and have been run from October to April. Previously they were kept open five evenings each week but during the past two years this has been reduced to three evenings. During these two years the work has been extended to include classes in cooking, sewing, manual training, mechanical drawing, bookkeeping, and shop work. All this work yields large educational returns on the investment and should be

extended. It would be increased in efficiency if put in charge of one person who was made responsible for its successful administration. Such schools carried to their highest development may open doors of opportunity to all who wish to increase their own knowledge and efficiency in almost any subject.

VACATION SCHOOLS

Last summer 28 boys paid \$1.50 each for a six weeks' course in manual training in the shops in the Lincoln school yard. The average daily attendance was 25. This indicates the support which might be given to vacation schools in this city. The experience of other cities shows that vacation schools may become a most useful and important part of the school system. They enable children to make up deficiencies so that they can go on with their classes in September instead of having to repeat the work of a half year and in some cities they enable the brighter children to make such rapid progress that they complete four grades each three years. Moreover, it has been found that where these schools are well conducted children profit more both physically and intellectually by attending school during the summer months than by spending their time aimlessly about the streets. There are many reforms that Springfield should undertake before attempting to secure permission to keep the schools open during all the year but experiments in that direction might well be undertaken immediately.

THE USE OF SCHOOL GROUNDS

Nearly all of the school yards are sufficiently large for the conduct of school athletics and all kinds of play activities. The city is indeed fortunate in having had for years boards of education that appreciated the value of securing ample school grounds. Most of the school yards are sadly in need of being re-planned in such a way as to devote part of their areas to grass and flowers and other parts to playgrounds and play equipment. Among the 20 elementary schools nine have at present a small amount of playground apparatus while the other 11 have none. Neither the grounds nor the equipments are being used anything like as extensively as they ought to be. Almost no provision is made whereby the children can play on the grounds after school hours, on Saturdays, or during the summer vacation. This means that the city has a large investment that could be advantageously used but is at present lying idle most of the time.

THE TEACHING OF GAMES

At present little is done in the way of teaching games to the children. At recess the play in the yards is unorganized and chiefly consists of scuffling and running about by the boys and running and screaming by the girls. Most of this is not seriously harmful but certainly it is not particularly beneficial. The trouble is that the children want to play but do not know what to do. This condition provides an opportunity which could be well utilized by giving the teachers practical instruction in the teaching of suitable games and arranging for a systematic assignment to yard duty during recess periods.

SCHOOL ATHLETICS

All of the elementary schools except the Matheny, Pryor, and Teachers Training have either football, basketball, or baseball teams and some of them have all three. The activities of these teams are not carried on under any athletic organization. In general the arrangements for the games are left to the boys but in some instances the principals attend the games and help in arranging them.

The high school has an athletic association governed by faculty members and students. It has no athletic field and the boys are compelled to use the state fair grounds for outdoor meets and the armory for indoor games. There are no athletics for girls in either the high or the elementary schools except that the school board has an arrangement whereby the high school girls are permitted to use the gymnasium of the Y. W. C. A. building on certain days.

Some better provision for school athletics ought to be made. Play, games, and physical competitions properly conducted constitute a most important portion of the education of the boy and girl.

PARENT AND NEIGHBORHOOD ASSOCIATIONS

During the past year the patrons' clubs connected with the different schools of the city have raised some \$1,300, which is being expended for the benefit of the schools. These organizations have helped to purchase stereopticon slides, pianos, pictures, and phonographs as well as to pay for lecture courses. Moreover, the meetings of these organizations have gone far toward familiarizing the parents with the needs of the schools and in-

creasing the appreciation of the community for its educational system. It is in accord with the policy of the board to encourage the principals in this work and this policy should be continued and the work fostered.

SCHOOLS AS BRANCH LIBRARIES

The public library co-operates with the schools by supplying selected sets of books for use by the pupils. This co-operation may well be extended. There are at present eight branch libraries in the schools while in three of the other buildings there are libraries of considerable size and importance belonging to the schools. In some of the large cities the superintendent of schools is ex-officio a member of the library board and through this arrangement the co-operation between the schools and the library is greatly facilitated. The same result could be brought about in Springfield if the board of directors of the library should voluntarily make a similar arrangement.

THE USE OF SCHOOLS FOR ELECTION PURPOSES

During the election of April 7, 1914, four of the schools were used as polling places. At that election the total expense for the renting of private premises for registration, voting, and revision was \$371.50. Probably a considerable proportion of this expense might have been saved by using other school buildings as polling places. In this use the civic and educational gains are even more important than the economic ones. Over 30 cities now use some of their school buildings for election purposes. In Chicago 75 school buildings were so used last April while in Boston many of the schools have been used for voting purposes for a number of years and a suitable equipment has been provided which is stored away in the basements when not in use. Springfield may well join with her sister cities in the widest civic utilization of her expensive school plant.

REGULATIONS FOR THE USE OF SCHOOL BUILDINGS

The board of education has drawn up regulations covering the use of school buildings which are in the main thoroughly satisfactory. The only change that seems advisable is to modify them so as to bring them in accord with the following policy:

In letting school buildings to outside organizations there are three arrangements which are increasingly recommending them-

selves as embodying the best policy for a board to pursue in this regard.

1. Free use of school accommodations may well be given to all educational and non-exclusive recreational and social activities under the auspices of organizations allied with the educational system.

2. The use of accommodations at cost should be afforded to private organizations actively promoting community welfare and individual culture.

3. Privileges should be let at a profit to organizations of a religious, political or industrial character under regulations which prevent damage to the property.

The regulations now in force provide in effect for use under the first two classes. They might well be extended so as to include the third, both from the standpoint of the income which would result from such use and the benefits to the community which would accrue from the offering of such privileges.

SUMMARY AND RECOMMENDATIONS

1. The school plant and school grounds represent an investment of more than \$1,000,000 and should be used more hours in the day and more days in the year so that the community may receive a larger return on its investment.

2. Among the ways in which buildings and grounds may be more extensively used may be mentioned more evening school work, the organization of vacation schools, the use of school yards as playgrounds, the organization of branch libraries in the schools, the utilization of the buildings for meetings of parent and neighborhood associations, and the use of school houses as polling places.

3. The board of education should employ a director of physical training thoroughly versed in school athletics and playground work. He should coach the teachers, organize a grammar school athletic league, and have charge of the summer playgrounds in school yards and park spaces. This latter phase of the work should be done in co-operation with the park board.

4. The school grounds should be re-planned so as to devote part of their areas to grass and flowers, and other parts to playgrounds and play equipment. In addition there should be one centrally located athletic field for use by high school students and for the inter-school games of the entire city.

5. Some arrangement should be made whereby well qualified teachers may be assigned to supervise after-school play and athletics on the school playgrounds. For this work they should receive extra compensation which might amount to about \$1.50 to \$2.00 per afternoon. For similar work New York City pays \$2.50.

FORMS USED IN CONDUCTING INVESTIGATION

PHYSICAL CONDITIONS OF CLASSROOMS—SPRING- FIELD, ILL. MARCH, 1914

Building.....Teacher.....Room No.....Grade.....
 Av. Attendance.....No. Sittings:Adjustable.....Non-Adjustable.....Total.....
 Length....ft. Width....ft. Height....ft. Floor Area....Sq. Ft. Cubic Contents....Cub. Ft.
 Sq. Ft. of Floor Area per Sitting.....Sq. Ft.
 Cubic Ft. of Air Space per Sitting.....Cub. Ft.
 Total Window Area.....Sq. Ft. Distance from Top of Window to Floor.....ft.
 Sq. ft. of Floor Area for each Sq. Ft. of Window Area.....Sq. Ft.
 Windows at Left, Back, Right, or Front of Children.....
 Lineal Ft. of Blackboard.....ft. Lineal Ft. per Sitting.....ft.
 Inches from Base of Blackboard to Floor.....inches.
 Do Seats Project under Front Edge of Desk.....How Far?.....Inches
 How Many Pupils Cannot Easily Rest Feet on Floor.....
 Distance from Rear Seat to Rear Wall.....ft.
 Color of Walls.....Color of Ceilings.....Color of Window Shades.....
 Do Shades Roll from Top or Bottom.....Has Room a Thermometer.....

CARD 4 BY 6 INCHES

PHYSICAL PLANT AND EQUIPMENT, BUILDINGS---SPRINGFIELD, ILL. MARCH 1914

Building_____Principal_____
 Total number of sittings in classrooms_____Seating capacity of assembly room_____
 Average attendance:boys_____girls_____Average enrollment:boys_____girls_____
 Classrooms:First floor_____Second floor_____Third floor_____Total classrooms_____
 Has principal room for office?_____Location of assembly room_____
 Heating system:hot air furnace, direct steam, indirect steam_____
 Thermostatic regulation_____Humidification_____
 Ventilation>window,gravity,plenum fan,exhaust fan_____
 Location of fresh air intake_____Location of cloakrooms_____
 How ventilated_____Location of toilets_____
 Toilets:Number seats for boys_____Number seats for girls_____Automatic flush_____
 Number of individual urinals for boys_____Do urinals have automatic flush?_____
 Material of walls and divisions of urinals_____of toilet floors_____
 Number feet of urinal trough_____Material of urinal trough_____
 Number of wash basins_____Individual soap provided_____Individual towels_____
 Number of bubbling fountains_____How often are windows washed?_____
 System of cleaning employed_____
 How often are floors washed?_____Are floors oiled?_____
 Stairways of fireproof material?_____Are stairways enclosed?_____
 Material of enclosure_____Handrails both sides_____Center handrail_____
 Width of stairways:first floor_____second floor_____Width of steps_____
 Height of risers_____Width of corridors_____Corridors unobstructed_____
 Fire escapes:number and kind_____
 Signal connection with fire department_____Inside hose equipment_____
 Chemical extinguishers_____Automatic sprinklers_____Automatic fire alarm_____
 Heating plant separated by fireproof walls,ceilings,and floors?_____
 Is building of fireproof construction?_____of fire retarding construction?_____
 Material of outside walls of building_____of floor beams_____
 Gymnasium facilities_____Area of playground_____
 Area of site_____Area of space occupied by building_____Date of construction_____

SPRINGFIELD PUBLIC SCHOOLS TEACHER'S RECORD

Name _____ School _____ Grade _____
(Last) (First) (Middle)

Permanent Address _____ Age _____

Preparation:

High School, Place _____ No. Months _____ Graduate, Date _____

Normal or Training _____ " " " "

College or Univ. _____ " " " "

Other Special Work _____

Years taught, including current year, in Rural Schools _____ in Graded
Schools _____ in High Schools _____ in other Schools _____

Years taught in Springfield Schools _____ In other Schools _____

Grade of Certificate held _____

Salary this year _____ Springfield, Illinois, Date _____ 191 _____

CARD 4 BY 6 INCHES

VOCATIONAL INQUIRY — 13-YEAR-OLD PUPILS — SPRINGFIELD, ILLINOIS, MARCH, 1914

NAME _____ SCHOOL _____ TEACHER _____ GRADE _____

WERE YOU BORN IN SPRINGFIELD? _____ IN ILLINOIS? _____ IN THE UNITED STATES? _____

DO YOU INTEND TO FINISH THE 8TH GRADE? _____ DO YOU INTEND TO GO TO HIGH SCHOOL? _____ TO COLLEGE? _____

DO YOU INTEND TO GO TO A BUSINESS SCHOOL? _____ WHAT DO YOU WANT TO DO FOR A LIVING WHEN YOU
GROW UP? _____

WAS YOUR FATHER BORN IN SPRINGFIELD? _____ IN ILLINOIS? _____ IN THE UNITED STATES? _____

WHAT IS YOUR FATHER'S OCCUPATION? _____

HOW MANY BROTHERS LESS THAN 21 YEARS OLD HAVE YOU WHO ARE AT WORK? _____

TELL THE AGE OF EACH BROTHER AND THE KIND OF WORK HE DOES:

1. AGE _____ KIND OF WORK _____

2. AGE _____ KIND OF WORK _____

3. AGE _____ KIND OF WORK _____

HOW MANY SISTERS LESS THAN 21 YEARS OLD HAVE YOU WHO ARE AT WORK? _____

TELL THE AGE OF EACH SISTER AND THE KIND OF WORK SHE DOES:

1. AGE _____ KIND OF WORK _____

2. AGE _____ KIND OF WORK _____

3. AGE _____ KIND OF WORK _____

(IN GIVING OCCUPATION OR KIND OF WORK, STATE BUSINESS AS WELL AS OCCUPATION WITHIN THE BUSINESS, FOR EXAMPLE:)
CONDUCTOR ON STREET RAILWAY, CLERK IN SHOE STORE, MACHINE OPERATOR IN BOX FACTORY

CARD 4 BY 6 INCHES

GIRLS-AGE AND PROGRESS-SPRINGFIELD, ILL.-MARCH, 1914

SCHOOL		TEACHER												GRADE	
		A G E S													
YEARS IN SCHOOL	5	6	7	8	9	10	11	12	13	14	15	16	17	18	TOTAL
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
Total															

Instructions. The object is to find how long the children of each age have attended the elementary schools, disregarding the kindergarten. Use a separate blank for each grade, even if there are two or more grades in the room, but disregard A and B divisions. Record ages as of the last birthday, and count as a year's attendance any time exceeding one-half a school year beginning with the child's first entrance into a first grade of any school, public or private. Disregard any period less than one-half year. Begin with the children of the lowest age in the grade, record the number of them that have attended for each given number of years, and so on for the children of each of the other age groups.

CARD 5 BY 8 INCHES, BLUE FOR BOYS AND WHITE FOR GIRLS

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