UNITED STATES BUREAU OF EDUCATION
BULLETIN, 1914, NO. 18 - - - - - - - WHOLE NUMBER 591

THE PUBLIC SCHOOL SYSTEM OF GARY, IND.

By WILLIAM PAXTON BURRIS
DEAN OF THE COLLEGE FOR TEACHERS, UNIVERSITY OF CINCINNATI

WASHINGTON
GOVERNMENT PRINTING OFFICE
1914

THE SCHOOL GARDEN.

ADDITIONAL COPIES

OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT

15 CENTS PER COPY

CONTENTS.

ILLUSTRATIONS.

LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, December 16, 1913.

SIR: For several years the public schools of the city of Gary, Ind., have attracted the attention of educators, and teachers and school officers have come from all parts of this country and from abroad to study them. Many brief accounts of these schools have appeared in the newspapers and magazines in the country, but I know of none that attempts to give a detailed and systematic account of their organization and work and the principles on which these are based.

That this office might have such an account Dr. Harlan Updegraff, at that time Chief of the Division of School Administration in this bureau, visited Gary twice in the winter and early spring of 1912, made a careful and prolonged study of these schools at first hand, and prepared a comprehensive account of their organization and work, together with a discussion of underlying principles and a comparison with the schools of other cities.

Dr. Updegraff's report and two brief visits to Gary in the summer and fall of 1912 convinced me that this bureau might do a valuable service to the cause of school administration by having another study made of these schools and publishing a report of the same in the form of a bulletin. To this end I arranged with Dr. W. P. Burris, dean of the College for Teachers of the University of Cincinnati, to study the schools and prepare a report for publication. To assist him in this work I put into his hands the Updegraff manuscript. Dr. Burris spent several days in Gary in the early summer and again in the fall. The accompanying manuscript embodies the result of his first-hand investigation and his study of the Updegraff manuscript and other reports. I recommend that it be published as a bulletin of the Bureau of Education.

It will, of course, be understood by the readers of this bulletin that the Gary school system is too young for a final judgment as to the value of those characteristics for which it is best known, but that time will prove they have merits seems to be the opinion of all who have studied the schools most carefully.

A study of this report will, I believe, show that the superintendent and board of education of the Gary schools have succeeded in working

out plans for a more economic use of school funds, a fuller and more effective use of the time of the children, a better adjustment of the work of the schools to the condition and needs of individual children, greater economy in supervision, a better correlation of the so-called "regular work" and "special activities" of the school, a more practical form of industrial education and at a cost less nearly prohibitive than is usually found in public schools in the cities of this country.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

THE PUBLIC SCHOOL SYSTEM OF GARY, IND.

I. THE CITY.

On the southernmost shore of Lake Michigan, at a distance of about 30 miles southeast of Chicago, is the city of Gary, Ind. It is named in honor of one of the most important officials of the United States Steel Corporation, which selected this site for one of its greatest manufacturing enterprises. When its foundations were laid seven years ago there were only wastes of shifting sand dunes, dotted here and there with clumps of scrub-oak trees and broken in places by swamps. To-day it is a city of 40,000 inhabitants, with all of the public utilities and facilities characteristic of the modern city. Other great plants erected by various manufacturing concerns are established here, and the numerous advantages of the location foreshadow the rapid development of a populous industrial center.

To an extent unusual even in manufacturing centers, the population of Gary is made up of foreigners. A large number are recent immigrants, and there are probably 30 nationalities to be found here. There are, of course, many skilled workmen, officials, and scientific specialists connected with the various industries, and these constitute a well-educated and important part of the population. But the bulk of the labor force is unskilled, and a large number are illiterate and ignorant of the English language. The children of all of these attend the public schools, and in a photograph of a typical group of 19 pupils which I saw, there were as many nationalities represented.

The rapid growth of the city and the character of the population presented a problem of uncommon difficulty in providing adequate and suitable educational facilities. Provision for these, however, was a first consideration by the city builders, and while keeping pace with the increase in population, there has developed in this city a unique and ingenious synthesis of educational influences which this bulletin seeks to describe and evaluate.

The interest in the school system to be found here has become so widespread that the board of education has found it necessary to set aside certain dates for visitors, with the request not to come at any other time, in order that teachers may properly perform their regular school duties.

During the four weeks of the year 1913–14 when visitors will be welcome—November 17–21, March 16–20, June 8–12, and July

27–31—special provision for observing the work of the schools will be made. The principals of the several buildings will hold round-table meetings the first hour in the mornings for the discussion of the plan of organization and the work of their respective buildings. The superintendent of schools, the assistant superintendents, and the heads of departments will hold round-table meetings daily at 4 o'clock for the discussion of the work of their respective departments. They also plan to have a representative from the faculty of a school of education for each of these weeks, who will hold daily round-table meetings for the purpose of criticizing and evaluating the schools from the standpoint of disinterested educational experts.

II. SALIENT SCHOOL FEATURES.

During my first inspection of the schools, in the latter part of June, 1913, there appeared at the head of an article in one of the local papers the following statistical items showing the growth of the schools during the past seven years:

Gary public schools.

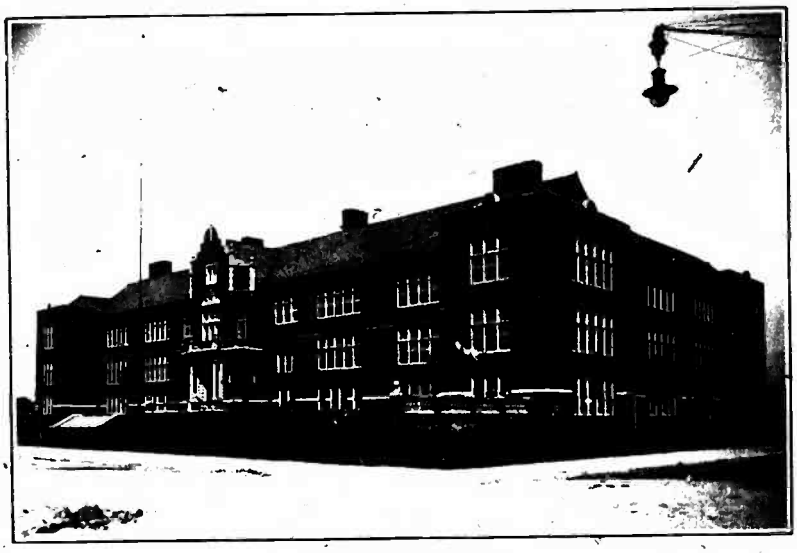
Cost of first schoolhouse	$550
Cost of buildings to date	$620,568
Number of teachers in 1906	4
Number of teachers in 1913	120
Number of pupils in 1906	143
Number of pupils in 1913	4,000
Teachers' pay roll in 1906	$3,500
Teachers' pay roll in 1913	$120,000
School tax in 1907	$52,573
School tax in 1912	$244,687
Total school tax in 5 years	$909,504
Bonded school indebtedness	$332,500
Number of books in library, 1908	1,000
Number of books in library, 1913	18,000

In another local paper, the same day, at the head of several columns describing the "New Froebel School," there appeared the following:

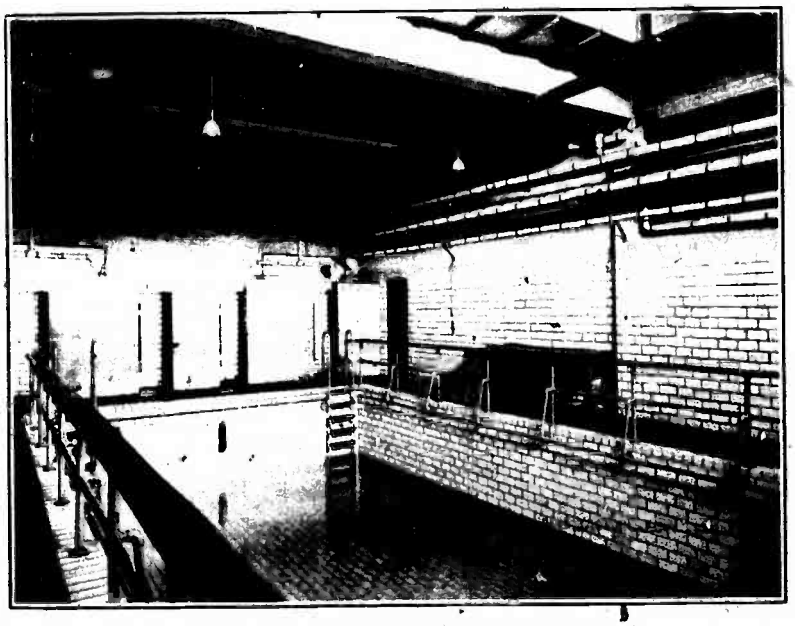
FACTS ABOUT FROEBEL.

Cost of entire plant, $350,000.
Ten acres of ground in site.
Will accommodate 2,800 pupils.
Will employ 70 teachers.
Auditorium will seat 1,200 people.
Equipment most perfect in world.
To be dedicated in September.

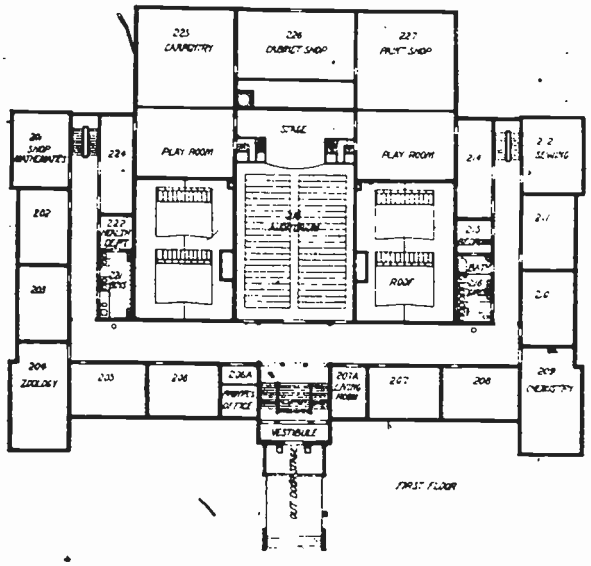
The above are interesting, not only in giving some idea of the present magnitude of a school system which is but seven years old, but also as an indication of the pride which the city takes in its schools. Why is it? Why this unusually generous response of the taxpayers? Why the widespread interest in what the school authorities of Gary are doing and attempting?



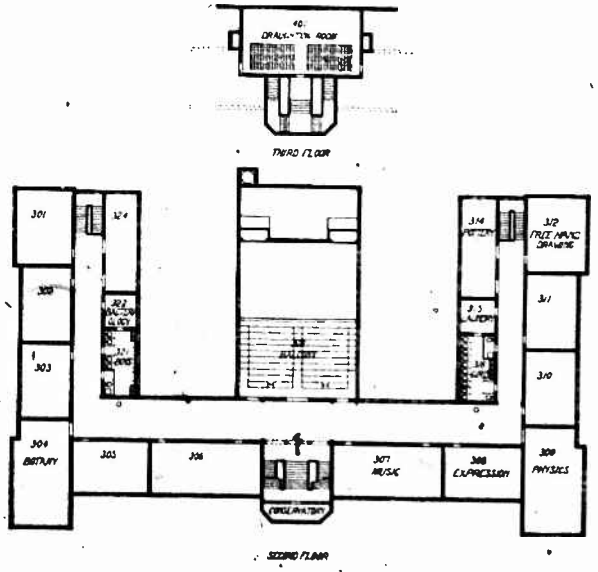
A. EMERSON SCHOOL.



B. SWIMMING POOL, EMERSON SCHOOL.



I. FIRST-FLOOR PLAN, EMERSON SCHOOL.



II. SECOND-FLOOR PLAN, EMERSON SCHOOL

The general answer is, *They are using all of the educational opportunities of the city, all of the time, for all of the people, and in a way which reveals to young and old that what they are doing is worth while.*

SCHOOLS OPEN THE YEAR ROUND.

At the present time they have 10 months' regular school and 10 weeks' "vacation" school, but they are working toward an organization of four quarters of 12 weeks each. Under this plan pupils will be required to attend any three of the four quarters, attendance in the remaining quarter being wholly voluntary. During this quarter of voluntary attendance pupils are to make use of their time with great freedom, involving the responsibility of choosing the best way in which to spend their "vacation" time. For such choice the 36 weeks' compulsory attendance prepares the way through awakened ambition, habits of industry, and development of initiative. Attractive opportunities in industrial, playground, and general culture activities are to do the rest.

In this way the opportunity of the school to find employment for older pupils in the industrial life of the community is increased practically fourfold. Instead of such pupils being thrown upon the market at one time for one portion of the year, a fourth of them would be on the market all of the time. Thus, in connection with vocational departments, four pupils can take the place of one regular continuous apprentice in shop or office. The 36 weeks of fundamental experience in handling certain machines, for example, is to be rounded out by 12 weeks of actual operation of machines in the industrial shops. This annual alternation of schoolroom activities and practical experience would make school laboratories of the shops, with an enormous saving in cost of equipment. Not only this, but the capacity of the school plant, with this four-quarter organization, is thereby increased, with corresponding reduction in the per capita cost and added advantages for children.

As my language indicates, the above form of organization is an ideal toward which they are rapidly approaching. In a school system which is in the making, one can not describe and explain the actual without reference to that which is definitely contemplated, and while the above is only one way in which it is proposed to solve the problem of vocational training, it is deserving of mention here on account of its suggestiveness and practical feasibility. The actual manner in which they are solving this problem will be described in subsequent pages.

But there are other reasons for the proposed four-quarter form of organization. A summary statement of these, taken from an argument by Supt. William A. Wirt, who introduced this division of the

school year when he was superintendent of the Bluffton, Ind., schools, will suffice:[1]

1. Many children are unavoidably absent during the school term under the old form of organization. Under the four-quarter arrangement, the allotted vacation of such children can be so arranged as to include such absence, thus insuring 36 weeks of schooling to them.

2. Older children can take their vacation of 12 weeks any quarter of the year during which they can find the most profitable employment. This is of special advantage to those families dependent upon assistance derived in this way.

3. Many times, on account of bad weather, contagious diseases, colds, lack of clothing, overcrowded and insanitary school conditions, etc., the summer quarter, for many very young children especially, is far better than the winter term.[2]

4. The cost of maintenance is not changed. With the same number of pupils per teacher, and giving 36 weeks of school, the cost is the same whether the pupils are all taught together for 36 weeks or only three-fourths of them together for 48 weeks. Moreover, this plan makes possible, without increased expenditure, a more adequate salary for teachers who are willing and able to accept employment for 48 weeks in the year instead of 36. Furthermore, teachers, as well as pupils, could take a vacation any one of the four quarters, instead of always being compelled to take their vacation in the summer as at present.

5. By permitting pupils to drop out of school at the beginning of any quarter of the year for their vacation, the classes would have to be 12 weeks apart. This would facilitate the easy transfer of pupils from one class to another, thus breaking up the "lock-step" and arriving at a wise compromise between individual and class instruction.

Reasons might be multiplied by way of showing that this plan makes it possible for all concerned to adjust the time spent in school to their convenience, and after the experiment of three years at Bluffton, Supt. Wirt is convinced that "when people are given a chance it will be found that they do not want to go to school at the same time any more than they want to travel at the same time." Some go south for the winter, some go north for the summer, and so on. Use the plant the year round, for this is good business economy, but do not unnecessarily increase its capacity by attempting to care for all at one time for only three-fourths of the year, then allowing it to remain idle for one-fourth of the year, for this is wasteful. This is a cardinal principle with him, and its early adoption,[3] with regular studies and special activities running continuously throughout the year, is definitely forecasted.

THE SCHOOL PLANT.

Because of the rapid development of the city, there are all kinds of school buildings and facilities in Gary, from a few of the most modern buildings, with elaborate equipment, down to the portable structures, alone or in groups, in which the work is conducted till more of the buildings suited to their purposes can be constructed. The Froebel

[1] See "A school year of twelve months," by Supt. Wirt, printed in Education, June, 1907.

[2] During the three years when the four-quarter plan was tried at Bluffton the attendance in the primary grades for the summer quarter was greater than for any other quarter of the year.

[3] At present there are legal difficulties to be overcome.

Building is the latest and most complete in its appointments, but at the time of my visit it was not in full running order; so I will describe the idea of a school plant which is exemplified in the Emerson School.

The Gary idea of a school plant, we are told in a little folder which is handed to visitors—

> is a playground, garden, workshop, social center, library, and traditional school combined under the same management. It is considered of the greatest importance that right conditions be provided for the pleasure and recreation of the child and adult. In addition, a properly organized playground, workshop, and school secure the same attitude of mind toward the reading, writing, and arithmetic that the child normally has for play. Also the shop and school features greatly increase the value of the plant as a recreation and social center for adults.

Exemplified in the Emerson School, a picture and floor plans of which are found on pages 22 and 23, there is a school plant which does not differ radically from many other school buildings to be found in cities throughout the country. But in the manner in which it is used there are many and important differences.

ELEMENTARY AND HIGH SCHOOL IN THE SAME BUILDING.

As will be seen from the uses to which the various rooms are put, all of the grades from the kindergarten to the end of the high school are under one roof. This is no accident. By means of this arrangement various purposes, economic and educational, are realized. From an economic point of view it is cheaper to have completely equipped centers than to duplicate such equipment in a large number of smaller centers. From an educational point of view it enables pupils to bridge the chasm between the elementary grades and the high school. By ceasing to make the high school a separate and distinct institution, to be "entered" and "graduated" from, pupils do not find a convenient place to stop when they have "completed" the eight grades. In fact the traditional elementary and high schools are here merged into one by introducing as early as the fifth grade several of the usual high-school subjects, the sciences in particular, taught by the regular high-school teachers. Not only this, but the very arrangement of the rooms—placing a grade room next to a science room, for example, so that younger pupils may see an inviting future opportunity—is intended to impress them with the unity of the program, while the practice of having the younger pupils watch the older ones at work, and also of having the older occasionally assist the younger in their tasks, emphasizes the fact that it is one school. Moreover, this arrangement results, practically, in having one standard of discipline for all grades of pupils, involving the obligation of the older to set a good example to the younger, so that the latter will behave like little men and women. Thus, by preventing a radical break in teachers as well as subjects, and by offering something new

and attractive year after year, especially in grades where attendance usually decreases so radically, an important condition for keeping pupils in school is fully met. For this reason the same special teachers have charge of grades 5 to 10, inclusive, and two sets of regular teachers cover the same grades; one, grades 5 and 6, the other grades 7 to 10.

DEPARTMENTAL TEACHING.

The arguments which have led to the introduction of departmental teaching in many elementary schools throughout the country, especially in the upper grades, are too well known to call for extended review here. In Gary it is considered that the most weighty of these apply with equal force in all grades of the school. Especially is this true if the various special activities which have won the right to a place in the school program are to be successfully utilized. Special activities call for specialists to conduct them. Teachers can rarely be found who are sufficiently many-sided to teach all of the "common branches" and assume the right attitudes toward these various special activities and handle them properly. For example, many teachers highly successful in the classroom would appear ridiculous if they attempted to conduct organized play which requires a special dress, good physique, agility, and other qualities not demanded of the ordinary grade teacher. To a greater or less extent and for various reasons the same is true with manual and industrial activities, music, nature study, gardening, drawing, etc., and so Gary is seeking the maximum of efficiency by division of labor, special preparation, and the adaptation of the various workers to the various lines of work. All reasonable objections to the departmental plan of organization are overcome by keeping pupils one half of the time under a classroom teacher for the regular traditional studies, the other half being spent with special teachers. In practice Gary has found it more satisfactory to divide the regular studies between two classroom teachers—one having charge of the reading, writing, spelling, and formal language work; the other, the history, political geography, and arithmetic.

The impossibility of regular teachers conducting successfully the various special activities is universally recognized, and the practice is common of employing a force of special supervisors and assistants. In Gary there are no supervisors,[1] aside from the principal and superintendent, the former acting as one of the physical training teachers. It is believed that regular teachers, giving instruction in a limited number of subjects, for which they have been specially trained and selected, make any overhead charge for supervision, beyond that of the principal and superintendent, an unnecessary

[1] There are, however, heads of departments and a director of industrial education.

expense, as well as undesirable on other grounds. Moreover, the character of the daily program and the manner in which the plant is utilized, with the scheme for the alternation between regular and special work, make it possible to accommodate a larger number of pupils in the same building with a teaching corps less in number than that necessary where special supervisors are employed.

THE DAILY PROGRAM.

In order to understand the nature of the daily program, the way in which all parts of the plant are used all of the day, and the manner in which regular and special work alternate, let us see how a 16-class elementary school would be managed in a school plant of a type with which all are familiar, namely, a building of eight classrooms with an auditorium, basement, library, playground, and an attic which may usually be converted without much difficulty or expense into a gymnasium, in case this has not been provided. Indeed, the first permanent building, the Jefferson, in which the operation of the present system at Gary was undertaken was one of this description. It was erected by the United States Steel Corporation for the use of the elementary schools in accordance with the practice common everywhere, before public funds were available and without any plans from Supt. Wirt as to the manner in which it should be arranged. He came to Gary with definite ideas of the kind of school plant to provide the conveniences, as well as the necessities, of the schools as he thought they ought to be conducted; but before such a plant could be provided it was necessary to use the facilities on hand, if possible, and to take care of the very rapidly increasing school population. What he did, therefore, is of interest to all school authorities, especially those confronted with similar conditions, who see in his plans the possibility of greater economy and efficiency as well.

For eight primary classes he formulated the following daily program:

Daily program No. I.

Time.	Regular studies.				Time.	Special activities.			
	Classroom I.	Classroom II.	Classroom III.	Classroom IV.		Basement, garden, attic, auditorium, shops, workrooms, laboratories.		Playground.	
8.45–10.15	1A	2A	3A	4A	8.45–9.30	1B	3B	2B	4B
					9.30–10.15	2B	4B	1B	3B
10.15–11.45	1B	2B	3B	4B	10.15–11.00	1A	3A	2A	4A
					11.00–11.45	2A	4A	1A	3A
1.00–2.30	1A	2A	3A	4A	1.00–1.45	1B	3B	2B	4B
					1.45–2.30	2B	4B	1B	3B
2.30–4.00	1B	2B	3B	4B	2.30–3.15	1A	3A	2A	4A
					3.15–4.00	2A	4A	1A	3A

Observe that only four regular schoolrooms are required for these eight classes. While these four classrooms are occupied by four classes engaged in the regular studies, four other classes are accommodated by other parts of the school plant devoted to the special activities. Half the day is given to the regular studies, and half the day to the special activities. The regular studies occupy two periods of 90 minutes each, one in the forenoon and one in the afternoon. The same amount of time is given to the special activities, the 90-minute periods being subdivided into 45-minute periods. The three hours, 90 minutes in the forenoon and the same in the afternoon, devoted to the regular studies (arithmetic, history, geography, and the formal language studies of reading, writing, spelling, and composition) are divided as the regular teachers see fit. Each regular teacher has but one class at a time, and the way in which the time is divided, whether in recitation, study, individual help, or otherwise, depends upon the needs of those in the class.

For eight other classes in the same plant, grades 5 to 8, inclusive, one class for boys and one class for girls in each of these grades, he formulated the following program:

Daily program No. II.

In actual practice it is found advisable to alternate the manual arts with the music, drawing, and literature, so that each may have a 90-minute period every other day.

Time.	Regular studies.				Time.	Special activities.			
	Classroom V.	Classroom VI.	Classroom VII.	Classroom VIII.		Science.	Manual arts.	Music, drawing, and literature.	Play.
8.45–10.15	5B	6B	7B	8B	8.45–9.30	5G	7G	6G	8G
					9.30–10.15	6G	8G	5G	7G
10.15–11.45	5G	6G	7G	8G	10.15–11.00	5B	7B	6B	8B
					11.00–11.45	6B	8B	5B	7B
1.00–2.30	5B	6B	7B	8B	1.00–1.45	5G	7G	6G	8G
					1.45–2.30	6G	8G	5G	7G
2.30–4.00	5G	6G	7G	8G	2.30–3.15	5B	7B	6B	8B
					3.15–4.00	6B	8B	5B	7B

Segregation of the sexes was not the result of any prejudice against coeducation, but was simply the result of attempting to give to each pupil that which he most needs. In doing this the organization of classes for play, gymnasium, manual activities, applied science, vocational studies, personal hygiene, etc., required this unisexual classification, with the result that it was retained in the regular studies in order to prevent the breaking up of classes several times during the day.

Combining the two daily programs given above into one, the manner in which the usual 8-classroom building is made to accommodate 16 classes, in connection with special rooms and outdoor playgrounds, becomes clear. It is also clear that all of the plant is used all of the available time.

Program showing how 16 classes are accommodated in a school building having only 8 regular classrooms.[1]

Regular studies.		Forenoon.		Afternoon.	
Teachers.	Room.	90 minutes.	90 minutes.	90 minutes.	90 minutes.
First grade	Classroom	1A	1B	1A	1B
Second grade	do	2A	2B	2A	2B
Third grade	do	3A	3B	3A	3B
Fourth grade	do	4A	4B	4A	4B
Fifth grade	do	5A	5B	5A	5B
Sixth grade	do	6A	6B	6A	6B
Seventh grade	do	7A	7B	7A	7B
Eighth grade	do	8A	8B	8A	8B

Special activities.		45 minutes.	45 minutes.	45 minutes.	45 minutes.	45 minutes.	45 minutes.	45 minutes.	45 minutes.
Teachers.	Room.								
Music and literature	Auditorium	1B	2B	1A	2A	3B	4B	3A	4A
Drawing and manual training	Basement	3B	4B	3A	4A	1B	2B	1A	2A
Music and literature	Library	5B	6B	5A	6A	7B	8B	7A	8A
Nature study	Basement	7B	8B	7A	8A	5B	6B	5A	6A
Three physical-culture teachers and the building principal.	Attic	2B	1B	2A	1A	6B	5B	6A	5A
	Playground	4B	3B	4A	3A	8B	7B	8A	7A
	do	6B	5B	6A	6A	2B	1B	4A	3A
	do	8B	7B	8A	7A	4B	3B	2A	1A

[1] See statement at the head of Daily Program No. II, above.

This program, taken with slight modification from the little folder prepared for the use of visitors, to which reference has already been made, is more easily understood and therefore more valuable for purposes of illustration than the more complicated program of the Emerson School with its 40 or more classes. Such a program as the above, however, with various modifications, is followed in all of the Gary schools. The daily program of the Emerson School will be found in the fourth section of this bulletin and is taken, with slight alteration, from an unpublished report on the Gary schools, prepared by Dr. Harlan Updegraff, formerly Chief of the Division of School Administration in the Bureau of Education.

It will be seen from the actual daily program of this school[1] that there are certain variations from that given above, but, in general, it is so arranged that half of the pupils give half of each forenoon and afternoon session to regular studies, followed by an equal amount of time given to the special activities. The other half of the pupils have the same program, but in reverse order. In this way the regular

[1] Since September, 1913, a new and more satisfactory program has been followed. See p. 41.

studies and the special activities are conducted continuously throughout the day, and by special teachers, on the departmental plan, as far as is considered desirable in either group of subjects. In the upper grades it has been found that the time allotted to the regular studies can be diminished so as to give more time to certain special subjects. In the grades corresponding to high school the recreational activities receive a different emphasis and place on the program, and this department in the system does not differ radically from that in cities elsewhere. The most important difference is in the length of the school day.

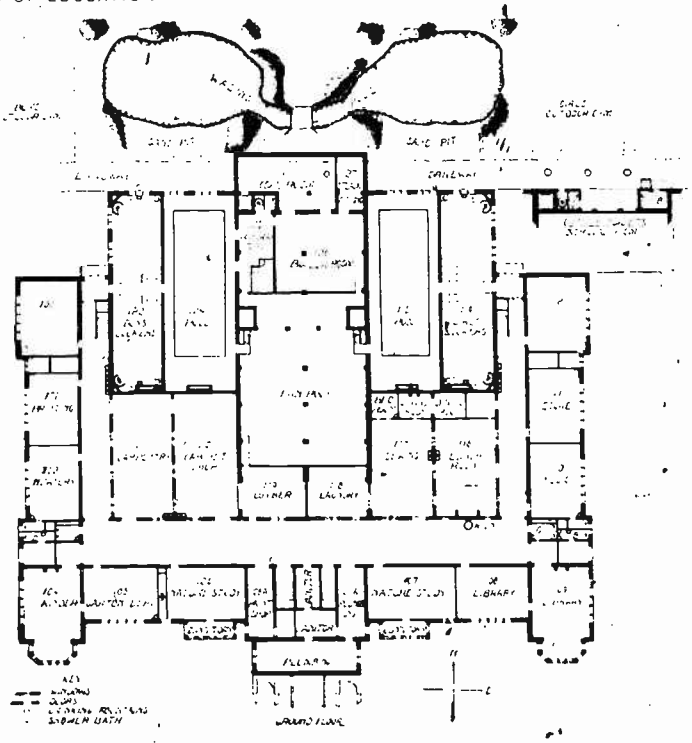
THE SCHOOL DAY.

In the actual programs of the Emerson School the school day appears to be excessively long. For the lower grades it is from 8.45 to 11.45 in the forenoon, and from 1 to 5 in the afternoon, making a total of seven hours; for the upper grades and high school it is from 8.30 to 12 in the forenoon, and from 1.15 to 5 in the afternoon, making a total of seven hours and a quarter. Nor is this all. Teachers are required to be on duty at 8 o'clock in the morning to assist pupils in work or play. The regular classroom teachers may depart at 4 in the afternoon; all others must remain till 5.

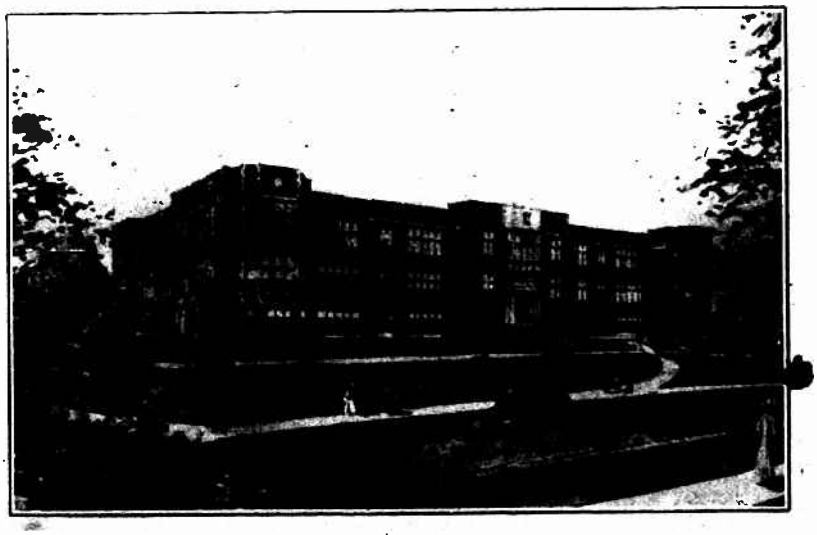
The purpose is to utilize the pupils' leisure time for wholesome recreation or supplementary work. Under the conditions of modern urban life this leisure time in most cases becomes "street and alley time," to use Supt. Wirt's way of putting it. He believes that the child should be trained in the definite control of his leisure for his well-being. Consequently, the school offers attractive opportunities for recreational activities and voluntary work. The playground teachers have charge of all of the recreational facilities for an hour before school, during the noon hour, and for an hour after school. The number of such teachers makes it possible to divide this time among themselves, so that the attendance of any one of them is not required for more than one of these extra periods each day.

PLANT OPEN SATURDAYS.

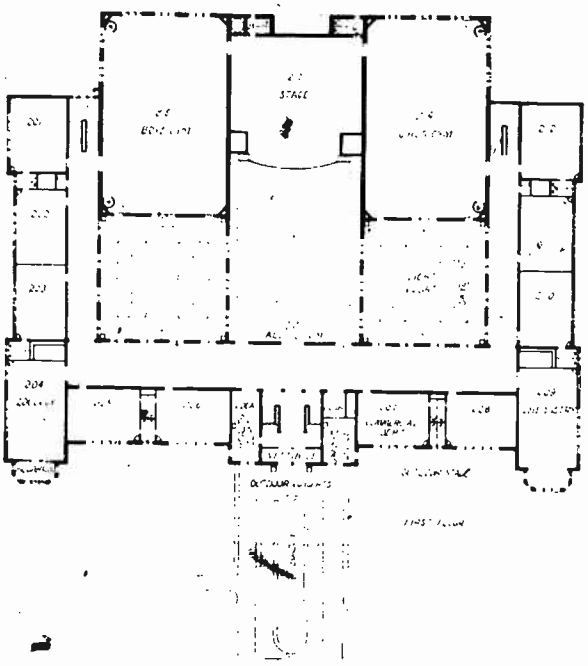
With the same purposes in mind as those which resulted in keeping the plant open on other days before and after regular school hours, the plant is kept open on Saturdays from 9 a. m. to 5 p. m. A sufficient number of the regular classroom teachers are called upon to meet the demand for this Saturday work, and they are paid $1 per hour for the extra service. Special teachers, in charge of laboratories, workshops, playgrounds, etc., receive extra pay at the rate of 75 cents per hour. Pupils come and go as they please, and work or play as they choose, and the responsibility imposed upon them leads to initiative on their part, whereby "the play impulse is transformed into the work impulse."



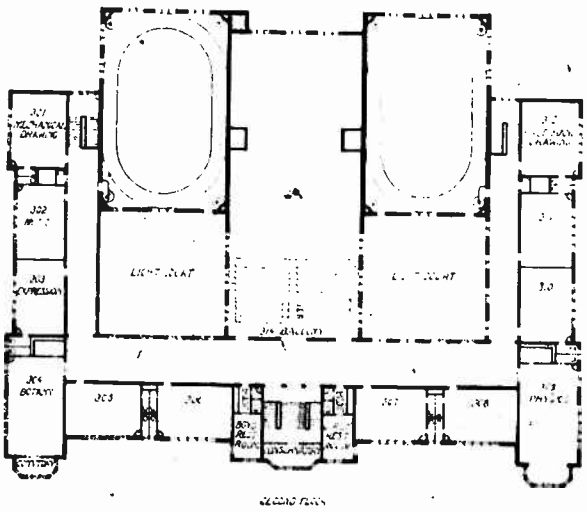
A. GROUND-FLOOR PLAN, FROEBEL SCHOOL.



FROEBEL SCHOOL.



A. FIRST-FLOOR PLAN, FROEBEL SCHOOL.



B. SECOND-FLOOR PLAN, FROEBEL SCHOOL.

PLANT OPEN EVENINGS.

The Emerson School plant is also open four evenings per week from 7 to 9.30 for continuation school and social and recreational center activities, such as are now found in most large cities. In spite of the disadvantages in location for such purposes, the attendance is steadily increasing, and the brilliantly lighted Emerson plant, grounds and building, in the evening presents an attractive picture with the various activities which we have indicated.

To a large extent those in charge of the evening instruction are from the day school force of the city, the work being so divided that each teacher will not have more than two evenings per week. Their compensation is at the rate of $1 per hour. Instruction in the gymnasium, swimming pool, football, basket ball, etc., is to some extent in charge of the more mature students from the upper classes of the high school, who are especially fitted for such work and are properly compensated.

VOCATIONAL TRAINING.

In preceding pages, in connection with my description of the plans for schools the year round, I told of a plan toward which the authorities are working in the solution of the problem of vocational training. I come now to a description of the manner in which they are actually attempting to solve it. This plan is not to be abandoned when the proposed arrangement is in effect. On the contrary, these two ways of working at this problem are complimentary to each other.

In brief, the plan consists in having a number of regular workmen, selected on account of their upright character, intelligence, skill, and teaching ability, employed the year round in equipping and repairing the school plants of the city, pupils working with them in much the same way as the old-time apprentices. There are carpenters, cabinet-makers, painters, plumbers, sheet-metal workers, engineers, printers, electricians, machinists, foundrymen, etc., sufficient to meet the needs of the schools; and instead of employing a large number of these to put things in shape during vacations, in the manner common in other cities, this city which has no long vacations, employs a much smaller number and keeps them continuously employed throughout the year. Bookcases, cabinets, tables, desks, benches, etc., are made, and these require staining and finishing. Some of the buildings or parts of buildings are painted, inside and out, and there is always varnishing to do. The interior finish of buildings and the desks and furniture have to be done over, from time to time, and so on. The engineer of the heating, lighting, and ventilation plant gives lessons in

firing, engineering, and ventilation. The electrician must care for many motors, lights, bells, clocks, etc., and there are opportunities for teaching winding, motor construction, etc. The printing plant offers opportunities for both boys and girls in printing, making notebooks, repairing and rebinding books, etc., and cuts for illustration, involving photography and photoengraving, must be made. Plumbing must be installed and kept in repair, and numerous parts of the school equipment call for the sheet-metal worker. A foundry and a machine shop are necessary, and these call for draftsmen to furnish plans and specifications. Moreover, in the purchase, care, and distribution of a great variety of supplies, there is a laboratory for giving insight into commercial and business methods, calling for clerks, stenographers, bookkeepers, filing of correspondence, making office reports, etc.[1]

At the time of my visit Supt. Wirt told me that 340 boys and girls attending the Emerson School were getting vocational experience in the fields mentioned. They were doing real work under the direction of real workmen, and the variety of opportunity aids them to find their places in the industrial or business world outside. With this vocational experience, changing from one thing to another as soon as they find no interest in or aptitude for a given line of work, this plan eliminates many of the "misfits" which would otherwise have to be discovered and eliminated by employers in business and industrial life, to the serious disadvantage of both employer and employee.

Add to the lines of work described above those phases of work involved in domestic science and domestic art, and the result is a remarkably complete opportunity for vocational education. For this, to which pupils in the upper grades and high school are admitted, the manual training of the lower grades is a preparation. Indeed such vocational training is definitely foreshadowed by the construction work of the smaller children; and surrounded, as they are, by older pupils and real workmen (overalls and all) and real shops which are doing real things, they, too, have a motive for learning to do things.

Elsewhere I shall discuss the cost of the school system of Gary, but it seems advisable to say here something of the expense for this phase of the work. Nearly all of these lines of work are self-supporting. Some of them, indeed, are a source of income to the schools, to say nothing of the value of them as an educational opportunity. I can best show this by giving a report which was submitted to the Gary school board:[2]

[1] See the article, "Can the administration department of a school system serve as a laboratory for the vocational training of children," by G. E. Wulfing, director of industrial education, Gary, Ind. School Board Journal, August, 1912.

[2] See also report for the year ending Aug. 1, 1913, p. 49.

To the members of the Gary school board.

GENTLEMEN: I present herewith a report on the work of the shops and the manual training and drawing departments for the year ending August 1, 1912.

Printing department.

	Debits.	Credits.
Value of work produced during the year		$1,972.92
Salary	$1,483.49	
Supplies purchased	314.00	
		1,797.49
Balance in favor of shop		175.43

Number receiving instruction, 35.

Cabinet department.

Value of work produced		$3,608.85
Salary	$1,398.40	
Supplies purchased	1,716.25	
Repairs	40.72	
		3,155.37
Balance in favor of shop		453.48

Number receiving instruction, 24.

Painting department.

Value of work produced		$1,591.25
Supplies purchased	$240.73	
Salary	1,104.00	
		1,344.73
Balance in favor of shop		246.52

Number receiving instruction, 46.

Report on the expenditures of the manual training and drawing departments for the year ending August 1, 1912:

For equipment.

Manual training shop	$371.15
Primary manual training and drawing	99.15
Advanced drawing and arts and crafts	22.05

For supplies and repairs.

	Amount.	Enrollment.	Per capita.
Manual training shop	$474.44	292	$1.625
Primary manual training and drawing	278.03	2,829	.098
Advanced drawing and arts and crafts	113.61	159	.715
Domestic science	149.40	137	1.09
Domestic arts	28.62	92	.311

Above does not include night school or Saturday attendances, but covers cost of same, which makes per capita cost higher than it would otherwise be.

Respectfully submitted.

G. E. WULFING.

In order to prevent any difficulty with the labor organizations, only union workmen are employed for the industrial work in connec-

tion with which pupils get vocational training. Pupils who work with them get no pay, their services being given in exchange for the instruction which they receive. In case pupils do not wish this vocational training, preferring to give their time to academic studies, in view of higher and professional education, they are at liberty to do so.

THE SCHOOL GROUNDS.

To the rear of the building site proper of the Emerson Building is a tract 320 by 295 feet, surrounded by a fence and subdivided by a division fence which separates it longitudinally into two equal parts, one part being for boys, the other for girls. In each is a playground, school garden, and garden house. There are also little houses for pet animals. These structures were planned and built by the pupils. There are also tennis courts, sand pits, wading pools, trees, and almost every conceivable kind of playground apparatus; and these things, too, are to a large extent the result of pupils' work. They even helped to build the fences, and woe unto him who would molest any of the trees or shrubbery which they have planted in the rich black soil shipped in and used as a covering to convert the sandy waste into a miniature park and garden.

The space is a little crowded for all of these things, and steps have already been taken to enlarge these grounds.[1] The tract upon which the new Froebel Building stands comprises 10 acres, one-half of which is used for playgrounds, 2 acres for school gardens, and 3 acres for a park. There are also two conservatories as necessary adjuncts of the garden and nature study work, the botany work in the upper grades and high school, and for supplying plants for the schoolrooms.

THE SYSTEM IN OPERATION.

The foregoing pages have indicated the general character of the work and the provisions for it, but as one observes the school in action he discovers various other special arrangements.

Arriving at the building soon after 8 o'clock in the morning, the visitor finds that children are already in every part of it. It is a warm June morning, and as one passes the playgrounds and garden many children are busy there. Entering the long spacious corridors, other children are seen hurrying to and fro, as at the time of passing from regular studies to the special activities during the day. Since the same rooms are used by different groups in the evenings and on Saturdays as well as during the regular school day period, each pupil must have a locker, where he may keep his books, hat, wraps, "gym" suit and shoes, ball, etc., according to each pupil's needs during the

[1] Adjacent ground has been purchased recently.

whole round of his daily occupation. Much of the passing, therefore, is occasioned by pupils returning things to the lockers or in taking from them something necessary for the occupation which comes next, and it is much to the credit of pupils that perhaps a majority of them do not find it necessary to use the lock to secure their belongings.

In some of the rooms used by pupils in the lower grades there is a peculiar kind of desk. They are constructed by the workmen in the industrial department, with the aid of pupils, and are not made merely "for listening." They are desks with vises attached, so that they can readily be converted into workbenches. They have also loose tops, which can be readily replaced when badly soiled, mutilated, or worn out. Instead of the usual type of seat attached to the floor or to the desk immediately behind it, each desk is provided with a substantial four-legged stool, also made by the school workmen, and this is pushed under the desk out of the way when the pupil does bench work of any kind. On occasion the pupils take up the stools and the tops of the desks and go out into the corridors, garden, or elsewhere to do such work as sketching, copying from the blackboard, etc.

Perhaps the visitor glances into the shops and, if so, he sees boys there working eagerly to complete some piece of work in which they have become deeply interested. Or, a glance into the auditorium at intervals during the day discloses children there engaged in dramatics, singing, listening to the Victrola or piano player, looking at the stereopticon or moving pictures, or hearing illustrated talks, etc.

One meets them in the corridors, studying and making notes on charts, maps, specimens, and other material exhibited there. They are in the laboratories, some working, others observing, older pupils "showing" the younger, or instructors conducting a regular class exercise.

It is not necessary to linger long where the regular studies are conducted. It is readily discovered, however, that in spite of departmental teaching, the special teachers are doing teamwork. For example, the teachers of the girls who have botany, physics, and sewing in grades 7 and 9, and those who teach them zoology, physiology, chemistry, and cooking in grades 6, 8, and 10, do not say to each other, "I have no need of thee." They meet and plan their work together. Even the playground teachers connect their work with other departments. The physiology teachers develop the theory of hygiene; the physical training teachers form those habits of right living which are its application; the arithmetic teachers develop the theory of mathematics, with actual practice in measuring things and in working with relations of magnitude in connection with real objects; the playground teachers supplement such work with games involving mathematical calculations. In a similar

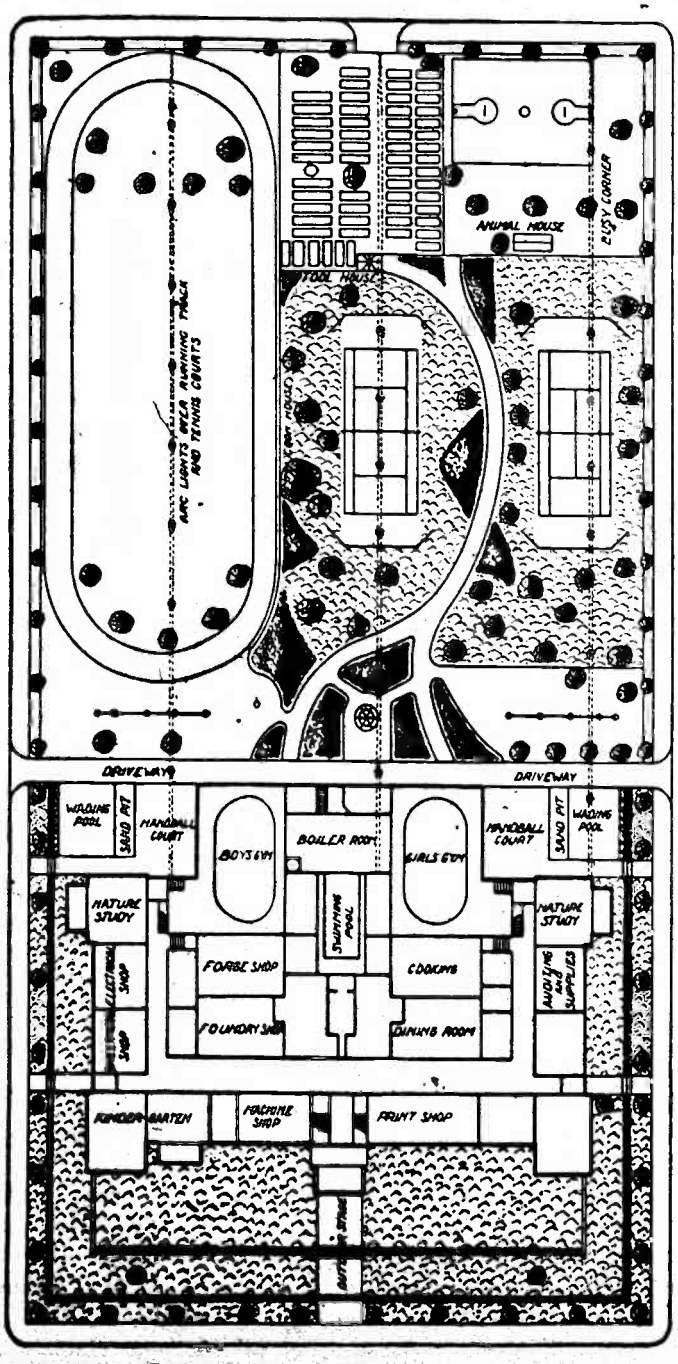


FIG. 1.—Plan of Emerson School and Playground.

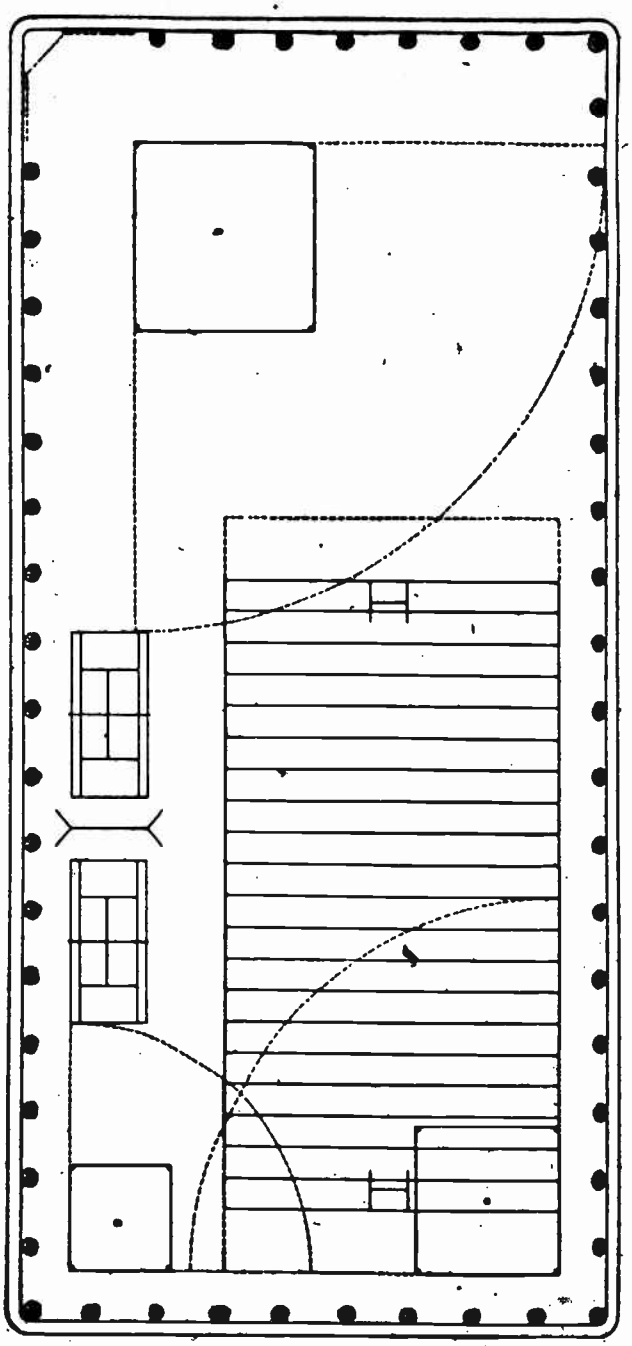


FIG. 2.—Playground adjoining Emerson School.

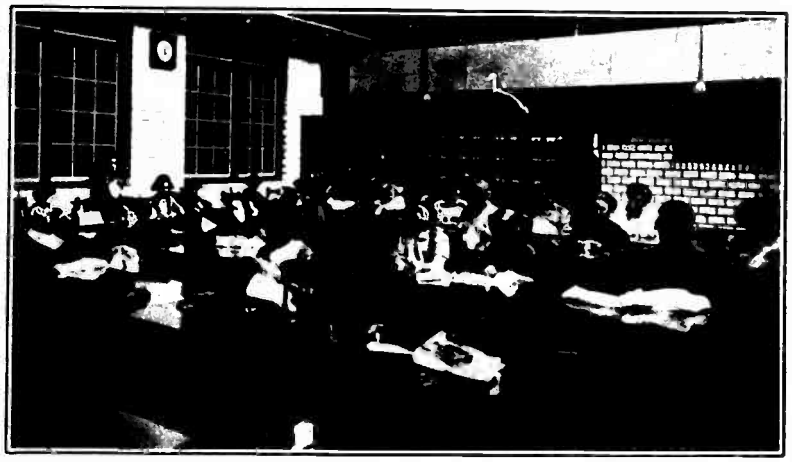
manner the playground supplements the dramatization work of the literature teacher. In a word, the principle of correlation of studies is clearly apparent, and while this principle may not be as closely applied as it might be where one teacher has charge of all the subjects in a grade, its value is fully recognized in all grades from the kindergarten up.

The girls in the advanced grades are also receiving vocational and industrial training, for in addition to learning how to be intelligent home makers, many of them are in the commercial and printing departments; some are at work in the arts and crafts; others in the school store and the school bank, these two adjuncts being an actual business department, conducted according to strict business principles, to give reality to commercial studies.

THE NEED FOR SPECIAL SCHOOLS LESS.

If inquiry is made as to what is done for pupils who are weak, physically or mentally, for those who are defective, retarded, or exceptionally bright, in a word, for any who can make use of any part of the school plant, but are in some respect so exceptional as to call for a special program, the answer is readily forthcoming. If the pupil is weak physically and can not undertake all of the work of a regular grade, he uses the other facilities of the school as he would use a sanitarium for gaining health. The character of the daily program permits him to spend all of the time in the special activities, if that is best for him. A child may, for instance, spend most or all its time in supervised out door play until it gains strength to do the regular amount of school work. Children are sent to school rather than kept at home to gain health. He can take up the regular studies as he becomes able to do so. If a pupil is deficient in one subject, or phase of a subject, he can do double work in this subject and "catch up" by attending the class dealing with that which he does not well understand, and omitting temporarily some of the special activities in progress at the same period of the day. He can also return on Saturdays for the necessary help and, if necessary, attend the "vacation" quarter. He is promoted by subjects, instead of being held back on account of failure in one or two branches. If he is defective, he does what he can. If he is retarded, he takes such activities as will awaken his dormant or arrested mental activities, entering upon the regular program of the normal pupil as soon as he is prepared for it. If he is exceptionally bright, he can go as fast as he is able, not neglecting the special activities to the extent that this variation in program would work injury to his health.

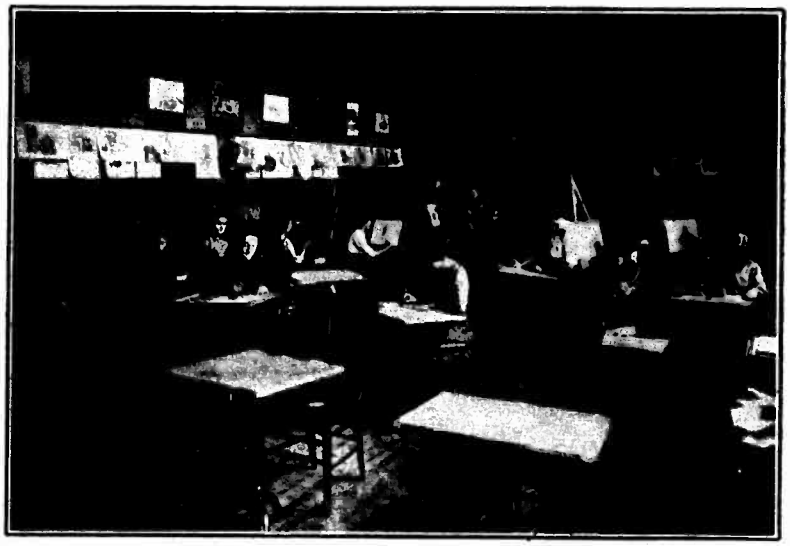
Thus the flexibility of the program in the Gary schools, with its alternation of regular studies and special activities and with exercises



A. SEWING ROOM, EMERSON SCHOOL.

B. COOKING ROOM, EMERSON SCHOOL.

A. PRINTING SHOP.



B. FREEHAND DRAWING ROOM.

in each in progress the whole day long, makes it possible to adapt the program to the pupil instead of attempting the reverse. If a pupil can not profit by one form of exercise, he does not have to mark time while others are doing so; he does something from which he can derive benefit. Thus there is no necessity for numerous expensive special schools, which are found in other cities, and are necessarily inconvenient to many on account of the wide area from which their pupils are drawn. This statement does not apply, of course, except in a limited way, to deaf or blind children or to those of such degree of abnormality as to require the special course of a school for feeble-minded. For such children a different kind of teaching, not a different adjustment of studies, is needed.

THE SCHOOL FARM.

Little need be said of the school farm. At present the indications are that it is a liability rather than an asset, so far as its use by the schools is concerned. It is a delightful tract of 160 acres, situated 12 miles east of the city, and easily accessible by the interurban cars and the public highway. A winding stream flows through it on one side, and the loamy bottom land and the upland, partly wooded but principally clear, partly sandy and partly clay, gives to the farm a most desirable variety of soil conditions for demonstration purposes. There is a fine herd of thoroughbred Holsteins, a model dairy, good orchards, and substantial farm buildings. A graduate in agriculture from one of the leading State universities is in charge, and with necessary assistants is engaged in trying to bring the farm up to a high state of cultivation and production.

For a while there were several boys on the place. Some were from homes in which they were surrounded by unwholesome conditions; others were boys who thought they might like farming for a livelihood. They went voluntarily, and a teacher was placed in charge of them. They constructed comfortable quarters in which to cook, eat, and sleep. They also built a one-room building with spacious fireplace, which served admirably for a clubroom and place of instruction. On one wall is a blackboard, and there must have been a certain charm in the surroundings when teacher and pupils gathered about the open roaring fire for story telling and for practical instruction suited to the interests of these young farmers. It was not long, however, before the boys began to discover that farm life under the conditions that prevail in that section, is not as profitable financially as employment in Gary's many industrial enterprises, and that greater investment is necessary for farming. Others found that the Emerson School plant offered much greater attractions; and at the time of my visit to the farm, "Boytown," as the boys called the group of buildings erected by themselves for their own use, was completely deserted.

The school-farm experiment was a failure as such, notwithstanding the fact that the boys, from 12 to 18 years of age, had to work around the cottages and on the farm only out of school hours. They received 15 cents an hour for their work and earned enough to pay their board and something besides. The following work card of a boy shows what he did and what he earned in two weeks:

Work card for two weeks of one of the boys in the farm school.

Dates.	Work done	Time.	Rate.	Earned.
		Hours.	*Cents.*	
December 18	Husking corn	2	15	$0.30
19	Shoveling clay	4	15	.60
20	Husking corn	3	15	.45
21	Mending tent	5	15	.75
22	Hauling wood	5	15	.75
23	Husking corn	3	15	.45
24	No work	0	15	.00
26	Laying linoleum	8	15	1.20
27	....do	9	15	1.35
28	....do	9	15	1.35
29	Teaming	6	15	.90
30	Painting	8	15	1.20
Total earned				9.30
Board for 2 weeks				6.00
Net earnings				3.30

The farm is not a place to send juvenile delinquents, for under the conditions of school life, such as we have described at the Emerson School, delinquents are few. It can be made a source of income and an object lesson to farmers in the vicinity, no doubt; and it may be a delightful place for school excursions. In some such manner the farm will continue as one feature of Gary's school enterprise, not less in value because the original purpose for which it was intended has been abandoned.

OTHER FEATURES AND USES OF THE SCHOOL PLANT.

One of the remaining features deserves brief mention, at least. I learned nothing of it on the occasion of my visit, and I present it in the language of another,[1] who depicts it with great enthusiasm:

One of the basement rooms in the Emerson School bears the legend—

BOYVILLE
COUNCIL CHAMBER
MAYOR AND CLERK'S OFFICE

Inside is a semicircle of aldermanic chairs with the mayor's siege d'honneur at the top. Here the representative council of Boyville, elected by the duly qualified voters, meets and passes its ordinances. The other day it enacted an ordinance making the kids cut out going over people's vacant lots in the school neighborhood. Did it themselves. They sent a delegation down to the Gary city council, requesting

[1] Herbert F. Roberts, on "Bolstering up the bulwarks," printed in the [illegible] Magazine.

more garbage cans for Gary and pledging the kids of Boyville to pick up the waste papers and put them in the cans and help keep the town clean. The delegation further demanded stricter enforcement of the law against the sale of cigarettes. The fact of the business is that in five years' time the kids of Boyville and the Emerson School will be running that town of Gary and running it right. In five years the Gary schools will own the whole works and everybody in it.

The officers of this school city, as I learn from the Updegraff manuscript, are elected in accordance with the practices which prevail in civil elections. To a certain extent Boyville exercises certain functions in the government of the school, and they issue a paper, The Boyville News, printed by the Emerson School Press and devoted to the interests of the school.[1]

There are also glee clubs, orchestras, a brass band, clubs, athletic teams, etc., and for these, as well as for public exercises, receptions, and other social gatherings the school makes appropriate provision, without charge. Something for everybody, young and old, to fit for efficient work and wholesome leisure, and everybody for something, seems a fitting way in which to characterize this effort to gather up, in a unitary and well-organized way, the educational and recreational agencies of the city.

At Gary it is held that the practice in other cities of introducing separate recreation centers, under a separate management, is poor economy and otherwise undesirable. On this point I may include here a statement and figures from the address of Supt. Wirt at the meeting of the Department of Superintendence, National Education Association, held at St. Louis in February, 1912:

> We have not utilized the school plants completely unless they are used for recreation and social centers by adults. Fortunately, a school plant that provides for the constructive play and recreation activities of children is also most admirably adapted for similar activities with adults. The playground, gymnasiums, swimming pools, auditorium, club and social rooms, library, shops, laboratories, etc., make a complete social and recreation center for adults. Experience has demonstrated that the facilities for academic instruction add to the attractiveness of the plant as a social and recreation center.
>
> Compared with the cost of such facilities and their use when separated from the school plant, the economy of the combined playground, workshop, and school plant is indeed surprising. The city of Chicago has a most elaborate system of recreation parks and field houses. Selecting the 11 most successful parks of the South Park Commission, we may compare the total cost and use of the 11 parks with the cost and use of one Gary school plant. Note that the attendance of the parks is the total, not the average, for the 11 parks. Also note that the cost of the school includes the furnishing of complete school facilities for 2,700 children, in addition to the social and recreation features.

[1] "Boyville" has been superseded by a "Students' council," elected by the students of the upper grades and high school, and exercising control over athletic, social, and other student affairs.

Chicago parks and Gary school compared, as to costs.

Items.	Total for 11 parks in Chicago.	One school in Gary.
Population	800,000	20,000
First cost, less land	$2,000,000	$300,000
Annual maintenance	$440,000	$100,000
Annual attendance.		
Indoor gymnasium	310,000	1,000,000
Shower baths	1,385,000	600,000
Outdoor gymnasium	2,000,000	2,000,000
Swimming pool	735,000	300,000
Assembly halls	270,000	1,000,000
Reading rooms	600,000	1,000,000
Clubrooms	70,000	50,000
Lunch rooms	520,000	20,000

In this same address Supt. Wirt held that the school does the work of the public library much more efficiently and much more economically. For this reason the Gary schools employ "specially trained teachers to direct the outside reading of children and cultivate an appreciation for good literature." These "literature" teachers meet each group of children for a 30-minute period on alternate days; and their classrooms, supplied with sets of books from the public library, are in the truest sense libraries for children, and they, children's librarians. Library maintenance and salary cost per book circulated in this way is only about 5 per cent of such cost in public libraries, while the life of the book circulated in sets under the direct control of the literature teachers is ten times that of the usual circulating book of the public library. For such reasons a branch of the public library is planned in each school plant, with an assistant from the public library in charge, and the literature teachers cooperate in cultivating and directing the reading of children. This arrangement, on account of the use of the school plant on Saturdays and in the evenings, enhances the efficiency of both library and school.

In line with this policy of effecting economies through a single management, and of getting the largest amount of service out of them, Supt. Wirt believes that art and museum collections should be installed in spacious corridors of school plants. He would also place the public parks adjacent to school plants and put them under the supervision of biology teachers in the high schools. He has already made a beginning in these things, and thus, by such centralization of educational and recreational agencies for young and old, he would secure the maximum of efficiency with the minimum of expenditure.

COUNTING THE COST.

Elsewhere, in connection with special phases of the work, the item of cost has received some attention. In the fourth section of this paper there is also a detailed comparison showing the cost of main-

taining the Gary schools, organized on the plan described in the foregoing pages, as compared with the cost of the school systems at Hammond, South Chicago, and Whiting, cities located in the same section as Gary, with conditions very much the same. In the three other cities the schools are organized upon the usual basis.

I propose to give here, in a somewhat systematic way, the reasons why a school system, organized as at Gary, is less expensive, all things considered, than in other cities where the common form of organization prevails.

1. *Cost of construction.*—Let us take, for comparison, a very common type of building to be found in cities everywhere, and contrast construction cost with that of the Emerson Building. Fortunately for such a purpose we have just such a building at Gary, the one described on page 32. The construction cost of the Jefferson Building, with a small playground, erected by the United States Steel Corporation, and, it is fair to suppose, in accordance with the strict methods of construction and accounting for which this corporation is celebrated, was $90,000. As compared with the construction cost of other such buildings with which I am intimately familiar. this seems a very reasonable figure.

The cost of the Emerson Building, with a large playground, containing the wealth of facilities shown on page 11, was $225,000.

The capacity of the Jefferson plant, run in the ordinary way, is 360 pupils. The capacity of the Emerson plant, so constructed as to be utilized in the manner which we have described, is, let us say, 1,800.[1]

The construction cost per pupil of the Jefferson Building is, therefore, $225; that of the Emerson Building, $125.

2. *Cost of operation and maintenance.*—The figures for the two buildings are as follows:

	Jefferson.	Emerson.
Light, water, heat, and ventilation	$1,800	$3,500
Janitor service	1,500	4,000
Principal	1,200	2,000
4 per cent on investment	3,600	9,000
Insurance, depreciation, and repairs	2,500	2,000
Total	10,600	20,500

The operation and maintenance cost per pupil of the Jefferson Building, is, therefore, $29.44; that of the Emerson Building, $11.38. The cost of this item is taken from the Annual Report of Superintendent Wirt, 1908. For a comparison with other cities in 1912–13, in which all of the school plants of Gary are included, see page 49.

[1] Supt. Wirt says that the capacity under the plan in operation since the beginning of the current year is 2,700.

3. *Cost of instruction.*—If we allow 40 pupils per teacher, the Jefferson Building will require 9 teachers; the Emerson Building, on the same basis, will require 45 teachers.

The average salary of teachers in the Gary schools, as will be seen by referring to the table just mentioned above, is $934.77. At this rate, therefore, the cost of instruction in the Jefferson Building would be $8,412.98; in the Emerson Building, $42,064.65.

But suppose the Jefferson Building be run on the old plan, making it necessary for special supervisors and teachers to come in, as in other cities, and give the special activities, while the regular teachers look on and mark time or mark papers, there would then be chargeable to the Jefferson Building her proportionate share of this overhead charge for such work. Let us see what this would be.

The total enrollment in the Gary schools is 4,188. The proportionate share chargeable to the Jefferson School, if run in the usual way, for special teachers, would be represented by the fraction whose numerator is 360 and whose denominator is 4,188.

There were 39 teachers of special subjects, according to Dr. Updegraff's manuscript, and these, if paid at the existing average salary now paid in the Gary schools, would receive $36,456.03. And, since the Jefferson School would be chargeable with 360/4188 of this, we must add $3,133.75 to the salary item of this school, making a total of $11,546.68, or $32.07 per pupil, as against the $42,064.65 chargeable to the Emerson School, or $23.36 per pupil.

4. *Total cost of items 1, 2, and 3.*—Gathering the above three items of cost into a table, we have the relative cost of a common type of building conducted in the usual way, as compared with the Emerson type of building conducted in accordance with a plan which uses all parts of it all of the time.

	Jefferson.	Emerson.
Cost of construction, per pupil	$225.00	[1] $125.00
Cost of operation and maintenance, per pupil	29.44	11.38
Cost of instruction, per pupil	32.07	23.36

The above calculations, used for purposes of illustration indicate that the Gary school system does not increase public expenditures for educational purposes. On the contrary, it apparently decreases them and provides numerous advantages at the same time.

It is clearly obvious that the erection of a number of unit plants, such as the Emerson, is less expensive than the erection of a much larger number of buildings of the Jefferson type. This is so, in the first place, for the reason that the cost in building construction does not increase in proportion to the size of building, materials used and facilities offered remaining the same, to say nothing of the cost of fewer sites. In the second place, the establishment of school plants

[1] Under the new program in operation since September, 1913, this item is still further reduced.

so constructed as to utilize constantly what is ordinarily waste space, or space which is used only a part of the time, makes it possible largely to increase the capacity of the plant. In the third place, there is a saving in equipment by installing it in a few as opposed to many centers. Moreover, the special activities under the new form of organization are conducted in parts of the plant which are less expensive, on the average, than regular classrooms, and were it not for the alternation of classes engaged in regular studies and those engaged in special activities, it would be necessary to double the number of regular classrooms, so that each pupil might have a desk and the use of a cloakroom.

It is equally obvious that the cost of operation and maintenance is decreased by increasing the size of the units. The figures above clearly show this. Janitor service in the Jefferson Building costs $4.16 per pupil per annum; in the Emerson, $2.22 per pupil per annum. The principal of the Jefferson School costs $3.33 per pupil per annum; in the Emerson, $1.11 per pupil per annum, and so on.

It is also clear that the cost per pupil for instruction is decreased by specializing the instruction and eliminating the overhead charges for supervisors and special teachers, now to be found in many other cities.

The figures available show these things. Some of them find verification in the report of 1912–13, although, it should be remembered, the rapid growth of the city, scattered over a large area, with school facilities of many kinds, some of which have been annexed and are "old-fashioned," makes the economies secured at the Emerson plant temporarily impossible in all of the schools.

GETTING MORE FOR THE MONEY.

But suppose the city of Gary should raise as much money per pupil as would be necessary to conduct its schools in the most efficient manner according to the usual form of administration. Then any or all of several things may happen, with the schools completely organized into unit plants like the Emerson School.

1. The necessary recreational and educational facilities may be furnished for all the people the year round. This, as we have seen, has been already realized in part.

2. There may be fewer pupils to the teacher. This is true now in the Emerson School with the building organized as it is.

3. Better salaries may be paid to teachers. This is also true now.

4. Superior equipment may be supplied. This is at present the case.

5. Experts may be employed in every line of work. This is not always the case at present, for reasons which we shall give later.

6. The problem of vocational training may be solved. This is possible now.

7. The necessity of numerous special schools may be avoided and more individual attention may be given to pupils. This is done now.

8. The public health may be better promoted. This is done.

9. Influences may be prevented which undo the work of the schools where they are conducted in the traditional way. This, also, is now being accomplished, to some extent, by decreasing the amount of "street and alley time."

Suppose further, that the public library, art galleries, museums, and the public parks could be administered by the same management, and all of these things become parts of the unit plants, with the income derived from taxation for the establishment and support of the same, as in other cities. Would this not result in greater efficiency and economy? At all events, it is necessary to suppose all of this, in order to appreciate the magnitude and significance of the plan whereby Supt. Wirt and his coworkers seek to integrate the facilities which a city should provide for the welfare of its people, in preparing for their leisure as well as their work, without unnecessary extravagance of expenditure.

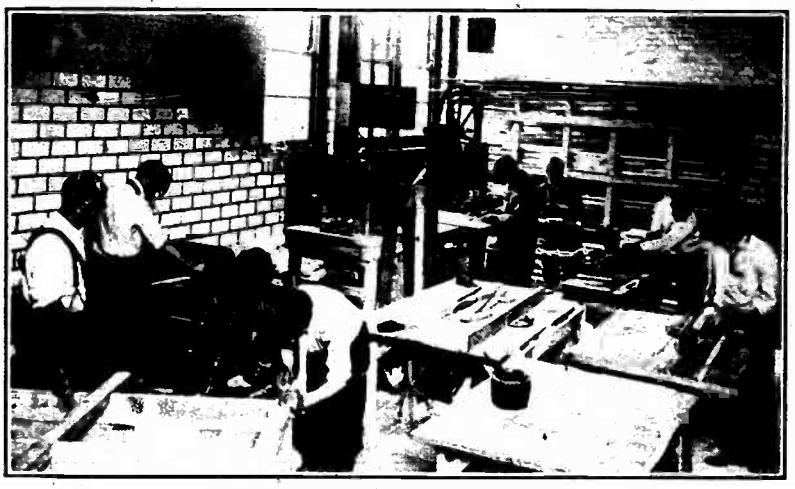
ADAPTING BUILDINGS OF THE OLD TYPE TO THE NEW PROGRAM.

Under the direction of Supt. Wirt, buildings of the usual type, including the Jefferson Building, even groups of portable one-room buildings, have been adapted to the new style of program. It had to be done, in order to care for the rapid increase of school population.

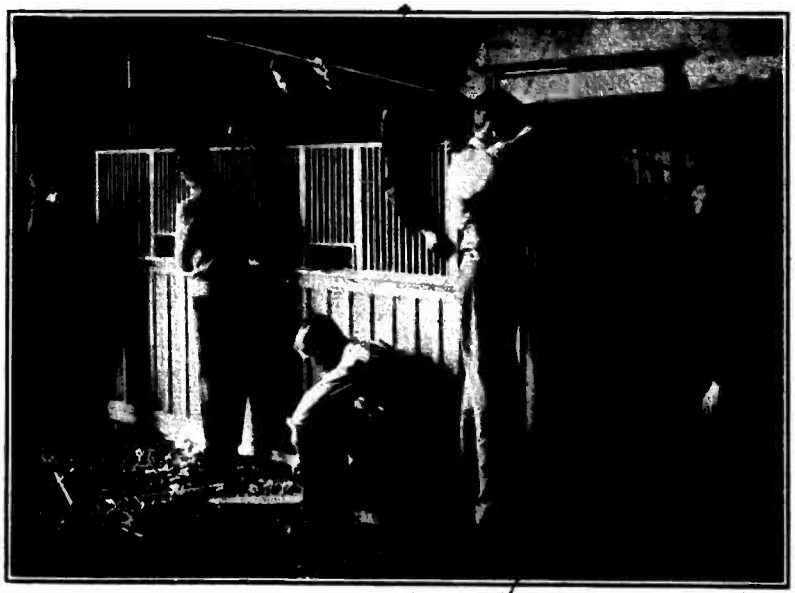
It was only necessary to have half as many regular classrooms as are needed for the old program, the rest of the available space being used for the special activities. The Jefferson Building was remodeled at comparatively little expense. A large attic space was converted into a gymnasium for use in bad weather. Ample basement space which had not been used at all was converted into rooms for some of the special activities, certain rooms which had been used as regular classrooms were fitted up for others, lockers were installed in waste spaces, the playground was equipped with apparatus, and the transformation which made it possible to double the capacity of the plant was accomplished.

At other old-type school buildings in annexed territory, with few rooms, portable one-room structures were set up on the school grounds, and the combined accommodations were suitably apportioned for the regular studies and the special activities, with the same result.

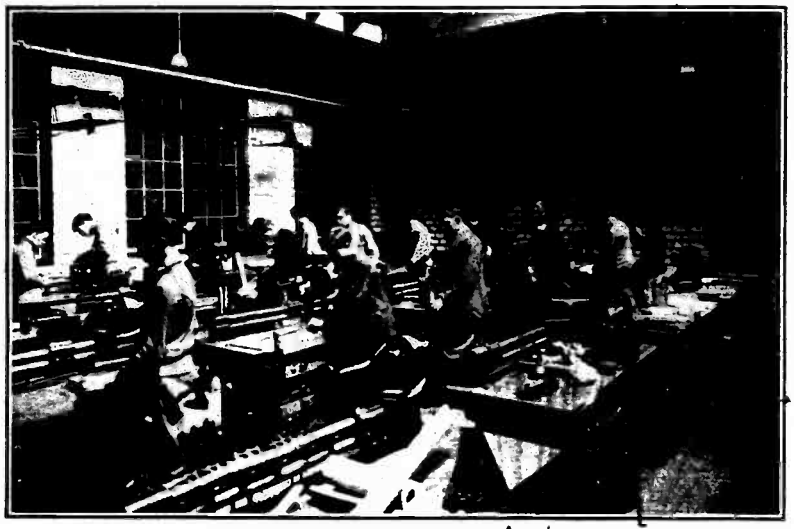
In newly settled territory the portable one-room structures were set up to keep pace with the growing needs, and these, too, were apportioned for use according to the same plan.



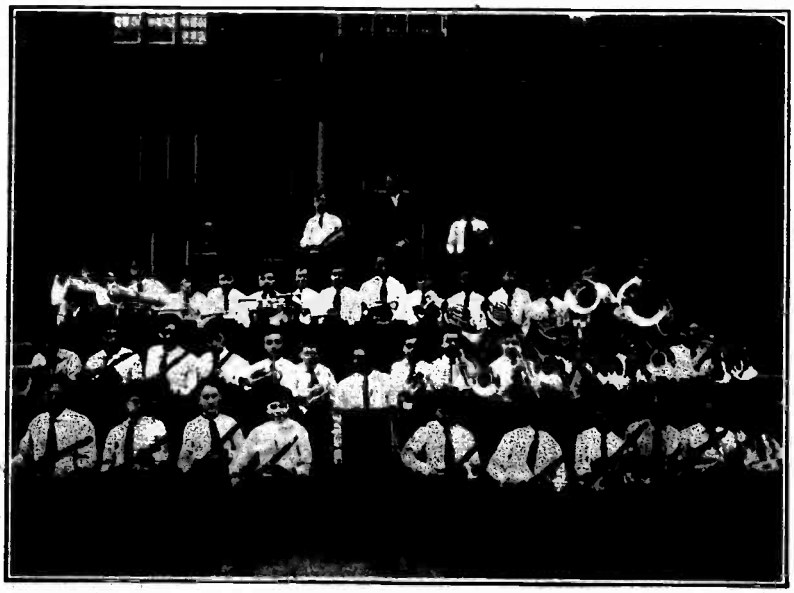
A. LATHE ROOM, EMERSON SCHOOL.



B. MAKING FURNITURE FOR THE SCHOOL BANK.



A. CABINET SHOP. Lathe Room.



B. THE SCHOOL BAND.

ADAPTABILITY OF THE SYSTEM TO OTHER CITIES.

From the foregoing description of what they did and are doing at Gary, it is clear that any system, if operated under the new program could, by alteration of buildings, greatly increase the school accommodations. Or, if a city already has classrooms enough to care for all of the pupils, with a desk for each, it could, by the adoption of the new plan, dispose of some of its school sites and buildings, the less desirable ones, of course, for enough, perhaps, to remodel and equip many of the remaining school facilities for use when operated under the new plan.

This would involve a reassignment of teachers according to the departmental plan. Some of them, if retained in the service, would have to enter upon courses of training for some special work, according to interests and aptitudes. Some, unfitted for working in the new spirit would have to be retired. The number of principals could be diminished. Supervisors would become teachers of special activities in centers, giving all of their time to this work, instead of spending much of it in going from building to building, breaking into the programs of classroom teachers at all hours of the day, and giving lessons while regular classroom teachers look on.

Thus reorganized, these centers become fitted for the wealth of opportunities afforded by the Emerson plant, not so well suited as a plant originally designed for such opportunities, perhaps, but nevertheless well adapted to these ends. The economies entailed in the cities of the country, in this manner, would probably aggregate millions of dollars.

III. SOME FURTHER EVALUATIONS.

In connection with the foregoing description of the Gary school system, its ideals as well as its achievements, I have occasionally stated or implied what appear to me to be clearly obvious advantages as compared with the usual type of school system. Indicated in summary fashion the school system at Gary provides:

1. For the better use of school buildings day and evening, including Saturdays, the year round, making it possible to save large sums of money expended for this purpose.

2. The possibility of a better division of time between the old and the new studies, spoken of throughout as "regular studies" and "special activities."

3. Greater flexibility in adapting studies to exceptional children of all kinds, thereby diminishing the necessity of special schools.

4. The possibility of more expert teaching through the extension of the departmental plan of organization.

5. The better use of play time, thereby preventing influences which undo the work of the schools.

6. More realism in vocational and industrial work, by placing it under the direction of expert workmen from the ranks of laboring men, selected for their personal qualities and teaching ability as well as their skill in the trade industries.

7. Better facilities for the promotion of the health of children.

8. The possibility of having pupils do work in more than one grade and of promoting them by subjects instead of by grades.

9. The possibility of having pupils help each other.

10. An organization which prevents a chasm between the elementary and high school, and prevents dropping out of school at critical periods in the lives of pupils by the introduction, at such times, of subjects which appeal to awakening interests not satisfied by a continuous and exclusive devotion to the "common branches."

11. A saving in the cost of instruction by reducing overhead charges for supervisors, making it possible to pay better salaries, or reduce the number of pupils per teacher, or both.

12. A plan which brings together, in a unitary way, with economy and efficiency in management, the other recreational and educational agencies of a city.

One of the alleged advantages enumerated above, calling for further comment, is that in regard to the value of extending departmental teaching. Its value in the higher grades is generally conceded, and for the the reason already given. But there are other grounds upon which its value can be defended, and upon the same grounds its extension is also justified.

In the first place, it definitely fixes the responsibility of the teacher of a given subject for the progress of a pupil in that subject for a longer period, sometimes several years. It is like putting a passenger, "personally conducted," on a through train, instead of having him change cars and guides at frequent intervals, with the loss of time entailed. In the second place it sets up a desirable competition between teachers. Knowing that he must be as well "liked" as another teacher in some other subject, there is the spur of professional rivalry in winning the esteem of pupils, which makes a teacher do his best. In the third place, it gives a breadth to the teacher's work. Instead of teaching a subject, arithmetic for example, the usual grade teacher in reality merely teaches phases of several subjects, for example, fractions in arithmetic, the geography of North America, and so on, sometimes for a period of years. In the next place, this contact with several teachers, instead of one, promotes the develop-

ment of the pupil's personality, especially by giving masculine as well as feminine points of view. Finally, the advantages in concentration of equipment in the place where instruction in a subject is given, and in the relaxation which pupils get in passing from place to place, are manifestly important.

As elsewhere stated (p. 12), there is no complete break of teachers anywhere, the advantage of which is apparent, and all reasonable objection to the departmental plan in the lower grades is overcome by placing the regular studies in the hands of not more than two teachers.

In giving a further estimate of the value of the system, from a pedagogical point of view, the one which overshadows all others in importance is the appeal which it makes to the self-activity of pupils. This applies to the matter of conduct as well as to work, and the free and natural way in which pupils govern themselves, without the rigorous discipline commonly found in other systems, is one of the noticeable features. This is especially true in the Emerson School, where teachers and pupils have caught the spirit of the system.

On this point I quote from Dr. Updegraff's unpublished report:

> The pupils of the Gary schools seem to display greater self-control, more self-respect, and more thoughtful consideration for others than the pupils of the same age in most of the better school systems of to-day. I am inclined to think that it comes largely from their games and play, but a part of it is due to the organization of the school and to the practices that have evolved in its administration.
>
> No child in Gary has a single teacher who is either the object of his hero worship, upon whom he tends to become more or less dependent, or his arch enemy, whom he detests with a growing hatred. The Gary pupil has several teachers, each of whom affects him in a different way. He becomes more conscious of his own individuality in this way and learns to determine for himself what he should do and become. Under such a system the influence of fellow pupils becomes relatively stronger than in the ordinary school. It is, therefore, highly important that care be taken to further the development of right ideals in the student body. Organized play has its great value here. Self-control, cooperation, courage, self-respect, consideration for others, and a sense of justice have been developed in the Gary youth to a noticeable degree and, it seems to me, largely through the spirit that prevails in consequence of the administration of the physical training department.

I concur in this opinion of Dr. Updegraff, convinced, as he is, that the character of the program produces a favorable attitude toward school work.

> Pupils who love their school better than the streets, who have a good physical tone through their play and physical exercises, and who have good self-control and independence of thought must naturally have a more favorable attitude toward school work.

The self-activity of pupils, in turning from play to work, is secured "by making the work interesting." That is the way in which it is usually expressed. Some of the writers who have described the Gary schools have called it education through play. The superintendent

himself frequently speaks of "transforming the play impulse into the work impulse," "giving the child what interests him," and the like. Fearing that such a way of putting it might be misleading, I suggested that what they are really trying to do is to reveal values to children as a motive for work by pointing out or creating situations in which these values are duly appreciated. To this he readily assented. This, indeed, is the aim, and in trying to realize it they not only recognize the importance of a close correlation of studies and activities, but also the even greater importance of an intimate correlation between the school and daily life. The necessity of "motivation," therefore, which has received and continues to receive attention everywhere finds here constant recognition, but to give in any adequate fashion a variety of specific instances of how this is done to evoke the self-activity of pupils would call for much space and tedious detail. Fortunately, abundant illustration of how it is now done by excellent teachers everywhere seems to make this unnecessary.

Not all of the teachers in the Gary schools, in spite of the specialization of instruction, are highly skillful in the realization of the school's purposes. The greatest hindrance, indeed, is in the lack of teachers properly trained with reference to the team work and the spirit demanded by a school system organized as this is. Several things have made the problem of securing such teachers unusually difficult. In some instances it has been a case of getting the best that could be had. Many desirable teachers were unwilling to come on account of the "factory town" character of the population and the lack of social life. Some balked at the long hours of the school day. Others, who did come, were trained for a different order of things. Some would not be good teachers under any system of organization, and so on. But the difficulties here are not insurmountable and are such as the lapse of time and a better understanding of the system will correct. One teacher with a fine scholastic training who had taught for many years under the traditional form of organization said to me, "I did not like it when I came here a year ago, but I begin to like it and see what it is all about; so I am going to stay." A few teachers who do not like to do clerical work complained of the requirements in keeping records. Others said that the complaint was not well founded. They are expected to do all of their school work during the school day, and behave when not in school as other good citizens actively interested in community welfare. I heard no complaint on account of the long hours.

The common people believe in their schools at Gary. There was no discoverable sentiment to the effect that the so-called cultural subjects are neglected. That they approve of the recreational facil-

ities, there was abundant evidence. The opportunities for vocational and industrial training are, in my opinion, the best yet devised.

I attended the high-school commencement exercises. There was a graduating class in this seven-year old school system of 27 members—14 boys and 13 girls. Ten students had completed the first year of "postgraduate work" and two had completed the second year of such work. They have, in effect, the six-and-six plan of organization, which has been and continues to be urged instead of eight years of elementary and four years of secondary education.

Supt. Wirt, in presenting the diplomas to the members of the graduating class, referred to these official documents as "work certificates," a significant reminder to the graduates of the purpose of the school. And this is the final word of a school program which begins with play.

IV. PROGRAMS AND STATISTICS.

On pages 13–15 I gave illustrative programs for the purpose of showing how the alternation of classes in regular studies and special activities is effected, the former being conducted in ordinary classrooms, the latter in other parts of the building or grounds, thus making use of all parts of the plant throughout the day, and thereby practically doubling the capacity of the building. The actual program of many buildings must necessarily vary somewhat from the scheme there given, but in all essential features the general plan is adaptable to buildings of all kinds. As a further illustration of its adaptability I submit the program of the Emerson Building followed up to the close of the year 1912–13 and the program introduced into this and other buildings at the beginning of the year 1913–14. I refer to these as the "old" and "new" programs. It will be seen that there appears to be a radical departure in the new program, but there still remains this alternation of classes, and in a manner which still further increases the capacity of the plant. I visited the schools a second time early in November, and everybody agreed that the new is an improvement over the old. Supt. Wirt said that this change does not indicate any change in policy and that the new had long been contemplated.

Old program, Emerson School, grades 1 to 5, inclusive.

Time.	Grade 1.		Grade 2.		Grade 3.		Grade 4.	Grade 5.
	A.	B.	A.	B.	A.	B.		
8.45–9.30.....	Reg.	Music. Lit.	Reg.	Play.	Reg.	Play.	Reg.	Music. Lit.
9.30–10.15.....	Stud.	Play.	Stud.	Music. Lit.	Stud.	Music. Lit.	Stud.	Play.
10.15–11.00.....	Music. Lit.	Reg.	Play.	Reg.	Play.	Reg.	Music. Lit.	Reg.
11.00–11.45.....	Play.	Stud.	Music. Lit.	Stud.	Music. Lit.	Stud.	Play.	Stud.
1.00–1.45.....	Reg.	M. Tr. Draw. N. St.	Reg.	Play.	Reg.	Play.	Reg.	M. Tr. Draw. N. St.
1.45–2.30.....	Stud.	Play.	Stud.	M. Tr. Draw. N. St.	Stud.	M. Tr. Draw. N. St.	Stud.	Play.
2.30–3.15.....	M. Tr. Draw. N. St.	Reg.	Play.	Reg.	Play.	Reg.	M. Tr. Draw. N. St.	Reg.
3.15–4.00.....	Play.	Stud.	M. Tr. Draw. N. St.	Stud.	M. Tr. Draw. N. St.	Stud.	Play.	Stud.
4.00–5.00.....	Playground.							

Explanations.

Reg. Stud.—Regular studies; i. e., language, mathematics, history, and geography.
M. Tr.—Manual training.
N. St.—Nature study.
Play—Dramatics, folk-dancing, games, etc.
Lit.—Literature.

Old program, Emerson School, grades 6 to 8, inclusive.

Time.	Grade 6.		Grade 6.		Grade 7.		Grade 7.		Grade 8.		Grade 8.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
8.30–9.30	Reg.	Reg.	Reg.	Reg.	Gym.	Gym.	Drawing or music.		Zool. or chem. or Wood-work.	Zool. or chem. or Cooking.	Zool. or chem. or Wood-work.	Zool. or chem. or Cooking.
9.30–10.30	Stud.	Stud.	Stud.	Stud.	Drawing or music.		Gym.	Gym.				
10.30–11.15	Gym.	Gym.	Drawing or music.		Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.
11.15–12.00	Drawing or music.		Gym.	Gym.	Stud.	Stud.	Stud.	Stud.	Stud.	Stud.	Stud.	Stud.
1.15–1.55	Reg.	Reg.	Reg.	Reg.	Zool. or chem. or Wood-work.	Zool. or chem. or Cooking	Phys. or bot. or Wood-work.	Phys. or bot. or Sewing.	Gym.	Gym.	Drawing or music.	
1.55–2.35	Stud.	Stud	Stud.	Stud.					Drawing or music.		Gym.	Gym.
2.35–3.15	Phys. or Bot. or Wood-work.	Phys. or Bot. or Sewing.	Zool. or Chem. or Wood-work.	Zool. or Chem. or Cooking.	Reg	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.	Reg.
3.15–4.00					Stud.	Stud.	Stud.	Stud.	Stud.	Stud.	Stud.	Stud.
4.00–5.00	Playgrounds and shopwork.											

Old program, Emerson School (high school).

Time.	Grade 9.		Grade 10.		Grade 11.	Grade 12.	Grade 13.
	Girls.	Boys.	Girls.	Boys.			
8.30–9.15	Alg. 1	Eng. 1	Anc. hist.	Plane geom.	Cicero.	Bookkeeping. Eng. 4	
9.15–10.30	German 1		Plane geom.	Anc. hist.	Commercial English Eng. 3	U. S. hist.	
10.30–12.00	Bot. or Sewing	Phys. or M. Tr.	Zool. or Cook.	Chem. or M. Tr.	Alg. and geom.	Vergil.	Chem.
1.15–2.35	Eng. 1	Alg. 1	German 2 or Cæsar.		Adv. stenog. or Med. hist. or Fr. 2		Trig.
2.35–3.15	Drawing and music.		Gym.	Gym.	Begin. stenog. or		Eng. 5
3.15–4.00	Gym.	Gym.	Drawing or music		Chem.	Physics	
4.00–5.00	Printing, manual training, cabinet work, gymnastics, etc.						

THE NEW PROGRAM.

At the beginning of the present school year a new program was introduced. It can be followed in alternate buildings or in only a part of a building. Patrons of the school may thus choose between the new program and the ordinary program used in schools everywhere. At Gary, however, there has never been a sufficient number of patrons choosing the traditional form of program to warrant its establishment anywhere. This fact is itself strong testimony in favor of the new order of things.

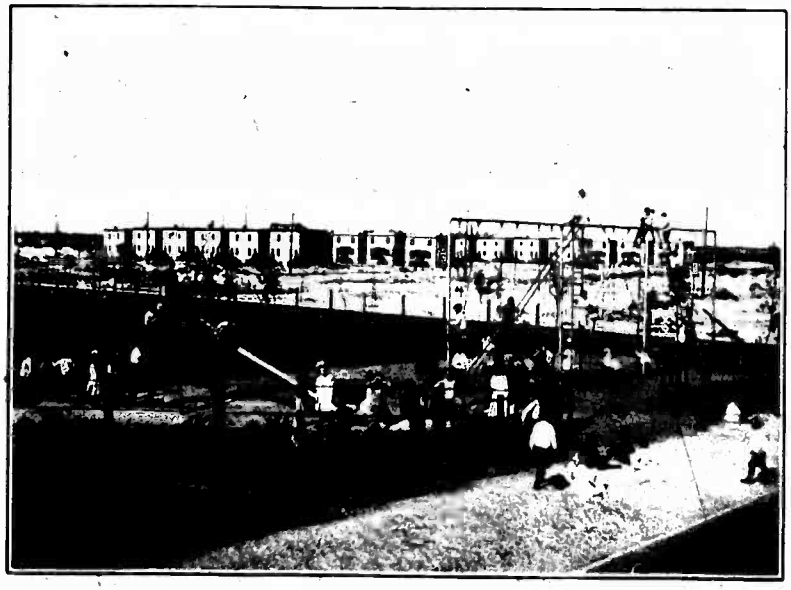
The one exception to be found is in the Froebel Building where there are about 70 colored children, but this is not due to the preference of the colored children themselves or their parents. The other patrons of the school, most of whom are foreigners, strenuously object to mixing colored children with the others; so they are placed in separate classes in charge of two colored teachers and taught in the old way. In the same building there are 1,500 white children who are taught according to the new program which we are about to describe; and any number of white children, limited only by the capacity of the building, could be cared for in the traditional way without interfering with this new program.

In order to carry out the new program it is necessary to have auditorium facilities, consequently it has been introduced into only

A. SAND PIT ON THE PLAYGROUND.

B. A CLASS OUT OF DOORS.

A. WADING POOL.



B. A SCHOOL PLAYGROUND.

NINETEEN CHILDREN OF NINETEEN NATIONALITIES, ALL MEMBERS OF THE SAME SCHOOL.

the Emerson, Froebel, Jefferson, and Beveridge Buildings. The school day is eight and one-fourth hours in length and is divided as follows:

	Hours.
1. History (including geography), English, and mathematics	2
2. Manual training, science, drawing, and music	2
3. Auditorium exercises for mass instruction	1
4. Play, physical training, and application by means of free activities	2
5. For lunch	1¼

The first line of work, which we will call Department 1, is conducted in the classrooms of the ordinary type. The second line of work, which we will call Department 2, is conducted in the shops, laboratories, and studios. The third line of work, which we will call Department 3, is conducted in the auditoriums. The fourth line of work, which we will call Department 4, is conducted in the gymnasiums, swimming pools, play rooms, and playgrounds.

Four groups of children are simultaneously engaged in these four different departments throughout the day.

Suppose, for illustration, that the school be divided into four groups of pupils, one-half of grades 1 to 4 being group A; one-half of grades 5 to 8, group B; the other half of grades 1 to 4, group C; and the other half of grades 5 to 8, group D. The plan of operation may then be indicated thus:

Plan of operation of four departments.

Time.	Department 1: Language, mathematics, history, and geography.	Department 2: Science, manual training, drawing, and music.	Department 3: Auditorium (mass instruction).	Department 4: Physical training, play, application.
8.15–9.15	A	B	.....	C D
9.15–10.15	B	A	C	D
10.15–11.15	C	D	A	B
11.15–12.15	D	C	.....	.....
12.15–1.30	A	B	.....	.....
1.30–2.30	B	A	D	C
2.30–3.30	C	D	B	A
3.30–4.30	D	C	.....	A B

What we have, in fact, with this simple arrangement, is two schools with grades 1 to 8 in each, one school working in Departments 1 and 2, while the other is occupied in Departments 3 and 4, alternately engaged thus throughout the day as indicated above.

Only one-fourth of the pupils in the building are engaged in Department 1 during any one hour of the day. Hence four separate classes are accommodated in this department in each regular classroom. Consequently the capacity of the building is four times the capacity of the regular classrooms. It should be remembered, however, that some of the regular classrooms must be used for music,

drawing, science laboratories, manual training, etc. The net capacity of the school plant, therefore, operating under this new program, is four times the capacity of half the total number of classrooms, including those so used.

In the lower grades it is found desirable to use 30 minutes of the two hours assigned to Department 2 for formal physical training. In these grades, therefore, the capacity of the building is still further increased, but this gain is offset by the practice of assigning grammar and high-school grades to regular classrooms for an additional hour in English and mathematics in place of one of the play hours.

In all grades the time assigned under Department 4 is divided between the teachers of physical training and play, and teachers of subjects listed under Departments 1 and 2. In the lower grades teachers of mathematics, history, etc., use their share of this time, one hour, in games and constructive plays that apply the subject matter taught in the regular classes. This period is definitely planned to give the formal work of the school expression through self-activity. Music and literature teachers use the application period for folk dances, musical games, dramatics, modeling in clay and sand, and free play construction in the "busy corners" of the playground or playrooms. Nature study teachers use this application period in the care of lawns, trees, shrubbery, plants in the building, gardens, animal pets, etc. In the upper grades mathematics teachers use this period in practical measuring and planning buildings, laying out playgrounds and spaces, and in practical accounting in connection with the clerical work of the school, and so on.

In the lower grades the occupations of the application period are based on the play impulse and are conducted out of doors, in the spacious corridors, etc. In the upper grades the workshops and laboratories furnish the best opportunity for this application work. The 30 minutes' formal gymnastics, therefore, is eliminated and a full hour is devoted to practical instruction in English and mathematics. Regular classrooms are used for this work, and it is conducted by shop and laboratory teachers. By this arrangement the manual-training teacher has his pupils for one hour in a regular classroom for instruction in English and mathematics, followed by two hours in a shop, where many opportunities are afforded for the application of this instruction. The science teacher has an hour in a regular classroom for instruction in English and mathematics, in connection with notebooks and test papers, followed by the laboratory periods. In this way the immediate application to real activities of the instruction in English and mathematics can scarcely be avoided.

The above scheme thus modified gives to grades 1 to 3 the following daily program:

	Hours.
Language and mathematics	1
Music, literature, and gymnastics	1
Play (application)	1
Auditorium exercises	1
Lunch	1¼
Language and mathematics	1
Manual training and nature study	1
Free play	1

To the other grades it gives the following daily program:

	Hours.
Language, mathematics, history, etc	2
Auditorium exercises	1
Lunch	1¼
Mathematics and English (taught by shop and laboratory instructors)	1
Science and manual training	2
Physical training and play	1

Observe that under the new program one-half of the school is at lunch from 11.15 to 12.30, and the other half from 12.15 to 1.30, an arrangement which is very desirable where there is a large number of pupils in the building.

There are many other interesting possibilities under the new program. For example, one-half of the school (the C and D groups) need not come to the building till 9.15, and the other half of the school (the A and B groups) can be excused at 3.30, if this seems to be the most satisfactory arrangement for entire groups or for individual pupils. Again, a part of the time assigned to Department 4 could be utilized in other ways than those already indicated. Each class of each group could give one period or more per week to the study of the Bible, under the direction of the various ministers and their assistants. Supt. Wirt has already arranged for testing this plan. He called the ministers of the city together and told them that pupils in school, with the consent of their parents, might be permitted to spend one or more hours per week in study at the various churches instead of spending this time at school. In this way Supt. Wirt seeks to solve the problem of religious instruction and the outcome of this experiment is awaited with interest. The ministers are in sympathy with the plan, and it is the intention to have pupils attend the church of their choice, where they may take up the study of the Bible and other religious literature.

Owing to the lack of funds the public library is unable, at the present time, to furnish an assistant at the various school buildings and stock the library rooms with a sufficient number of books. Consequently, Supt. Wirt has decided to have each class spend a part of the time assigned to department 4 in the public library, the class being in charge of a regular teacher and a library assistant. On the occa-

sion of my last visit I found a class of 40 children in the children's room of the central library busily occupied in reading books, looking at pictures, studying stereopticon views, etc. A teacher and a library assistant were giving them necessary help, and it seemed to me that the time was well spent.

The plan of having science and shop instructors teach mathematics and English involved in their subjects also appeals to me as excellent. There is almost universal complaint on the part of science teachers to the effect that pupils do not know English and can not apply their mathematics. In answer to such complaints the superintendent says to them, "Take your classes and drill them on the English and mathematics involved in your subject." The science and shop teachers are pleased to do so, and gave warm approval of the arrangement.

Class schedule, Emerson School, 1913–14.

Teachers and studies.	8.15 to 9.15			9.15 to 10.15			10.15 to 11.15			11.15 to 12.15		
Miss Alger, English, 306	9B			12			11					
Mrs. Child, German, 205	10A			Auditorium.			9A					
Miss Hall, Latin, 203	10B						9B			11		
Mr. Chadwick, history, 208	12			10A								
Miss Stright, English, 207	9A			Auditorium.								
Mr. Johnson, mathematics, 202	6A	7B	7A	10B						9A		
Mr. Engle, chemistry, 209	$8A_1$ [4]	$6B_1$ [4]	$8B_1$ [4]	$8A_2$ [4]	$6B_2$ [4]	$8B_2$ [4]						
Miss Ames, zoology, 204	$8A_2$ [4]	$6B_2$ [4]	$8B_2$ [4]	$8A_1$ [4]	$6B_1$ [4]	$8B_1$ [4]						
Mr. McClellan, physics, 309				Auditorium.			$7A_1$ [5]	$6A_1$ [5]	$7B_1$ [5]	$7A_2$ [5]	$6A_2$ [5]	$7B_2$ [5]
Miss Snyder, botany, 304				Auditorium.			$7A_2$ [5]	$6A_2$ [5]	$7B_2$ [5]	$7A_1$ [5]	$6A_1$ [5]	$7B_1$ [5]
Miscellaneous industrial work	8B [4]	8A [4]	6B [4]	8B [4]	8A [4]	6B [4]	7B [5]	7A [5]	6A [5]	7B [5]	7A [5]	6A [5]
Miss Krentel, cooking, 115	8B [4]	8A [4]	6B [4]	M 8B [4]	M 8A [4]	M 6B [4]	8B	8A	6B			
Miss Ida Anderson, sewing, 212	7B	7A	6A	Auditorium.			M 7B [5]	M 7A [5]	M 6A [5]	7B [5]	7A [5]	6A [5]
English and mathematics, 302	7A McClellan, Snyder.	6A McClellan, Snyder.	7B McClellan, Snyder.				8B Arnett.	8A Arnett.	6B Arnett.			
English and mathematics, 201	7B Arnett.	7A Arnett.	6A Arnett.				8A Engle, Ames.	6B Engle, Ames.	8B Engle, Ames.			

Class schedule, Emerson School, 1913–14—Continued.

Teachers and studies.	8.15 to 9.15			9.15 to 10.15			10.15 to 11.15			11.15 to 12.15		
Miss Lynch, expression, 308	6B	8B	8A	Auditorium.			6A	7B	7A			
Mr. Snyder, music, 307	4C 4B	4C 4B	4C 4B	4B 4C	4B 4C	4B 4C	5A 5C	5A 5C	5A 5C	5C 5A	5C 5A	5C 5A
Mr. Yeager, mechanical drawing, 401				6B 4	8B 4	8A 4	M 5 6B	M 5 8B	M 5 8A	6A 5	7B 5	7A 5
Miss Lull, free-hand drawing, 312				6B 4	8B 4	8A 4	M 5 6B	M 5 8B	M 5 8A	6A 5	7B 5	7B 5
Miss Galt, girl's gymnasium, 114	11 girls.			Auditorium.			12, 10A, 10B, girls.			9B girls.		
Mr. Gilroy, boy's gymnasium, 124	11 boys.			Auditorium.			12, 10A, 10B, boys.			9B boys.		
Mr. Briggs, boy's gymnasium, 124				3d								
Mr. White, stenography, 206	Advanced shorthand.			Typewriting.			Beginning shorthand.			Typewriting.		
Miss Low, 4th and 5th grade, 303	5A			5C			4C					
Miss Graves, 4th and 5th grade, 310	5C			5A			4B					
Auditorium				11, 9A, 9B, 7A, 7B, 6A								
Miss Brooks, 1st grade, 210	1B			1C			1B Application.					
Miss Faxon, 2d and 3d grade, 211	3			2			3 Application.					
Miss M. Anderson, 1, 2, and 3 handwork, 101	1C			1B			2 Application.					
Miss Young, play, 114	2			3			1C					
Lunch hour										12, 10A, 10B, 8A, 8B, 6B, 4B, 4C, 3, 2, 1B, 1C		

Class schedule, Emerson School, 1913-14--Continued.

Teachers and studies.	12.15 to 1.15			1.15 to 2.15			2.15 to 3.15			3.15 to 4.15		
Miss Alger, English, 306							French I.			French II.		
Mrs. Child, German, 205	8B						7A			7A		
Miss Hall, Latin, 203				8A			Auditorium.			7B		
Mr. Chadwick, history, 208	8A			8B			Auditorium.			10B		
Miss Stright, English, 207	6B			6B			6A			6A		
Mr. Johnson, mathematics, 202				9B			In shops.			12		
Mr. Engle, chemistry, 209	12	12	12	12	12	12	Auditorium.					
Miss Ames, zoology, 204	10A	10A	10A	10A	10A	10A	Auditorium.					
Mr. McClellan, physics, 309							11	11	11	11	11	11
Miss Snyder, botany, 304							9A	9A	9A	9B	9B	9B
Miscellaneous industrial work	10B	10B	10B	10B	10B	10B	9B	9B	9B	9A	9A	9A
Miss Krentel, cooking, 115	10B	10B	10B	10B	10B	10B	Auditorium.					
Miss Ida Anderson, sewing, 212							9B	9B	9B	9A	9A	9A
English and mathematics, 302												
English and mathematics, 201				11 McClellan.	11 McClellan.	11 McClellan.				10 Yeager.	10 Yeager.	10 Yeager.
Miss Lynch, expression, 306	10A	10A	10A				9A	9A	9A			
Mr. Snyder, music, 309							Auditorium.					
Mr. Yeager, mechanical drawing, 401				10A	10A	10A	Auditorium.					
Miss Lull, free-hand drawing, 312				10A	10A	10A	Auditorium.			9B	9B	9B
Miss Galt, girls' gymnasium, 114				9A, 7A, 7B, 6A, girls.						6B, 8A, 8B, girls.		
Mr. Gilroy, boys' gymnasium, 124				9A, 7A, 7B, 6A, boys.						6B, 8A, 8B, boys.		
Mr. Briggs, boys' gymnasium, 124				5A 5C						4B 4C		

Class schedule, Emerson School, 1913–14—Continued.

Teachers and studies.	12.15 to 1.15	1.15 to 2.15	2.15 to 3.15	3.15 to 4.15
Mr. White, stenography, 206		Commercial English.	7B English R 203.	
Miss Low, 4th and 5th grade, 303	4B	4C 4B Application.	Auditorium.	5A 5C Application.
Miss Graves, 4th and 5th grade, 310	4C	4B 4C Application.	Auditorium.	5C 5A Application.
Auditorium	3, 2, 1B, 1C		12, 10A, 10B, 8A, 8B, 6B, 5A, 5C, 4B, 4C	
Miss Brooks, 1st grade, 210	Auditorium.	1A	1C	
Miss Faxon, 2d and 3d grade, 211	Auditorium.	3	2	
Miss M. Anderson, 1, 2, and 3 handwork, 101	Auditorium.	2	3	
Miss Young, play, 114	Auditorium.	1C	1B	1B, 1C, 2, 3
Lunch hour	11, 9A, 9B, 7A, 7B, 6A, 5A, 5C			

NOTES.—The length of the courses in science, industrial work, music, and expression below the high school is one-third of the school year; the first subdivided column in each period contains the program for the first term.

Classes designated M are for mathematics and English. The upper right-hand corner classes are helpers.

The teacher of music and the teacher in expression alternate their programs.

SOME STATISTICS.

In showing the statistical aspects of the Gary school system, as compared with other cities, I have selected available figures from the reports of the four Calumet region municipalities. As in all such cases, there are certain comparisons which are unfair, in the matter of improvements, for example, on account of two of the cities having just completed new buildings; but, on the whole, the showing is an interesting one.

The four Calumet region cities.

Items.	Hammond.	East Chicago	Whiting.	Gary.
High-school graduates	26	25	29	27
High-school enrollment	225	133	157	253
High-school salaries	$15,307	$9,252	$12,209	$14,187
High-school maintenance	$4,173	$2,608	$3,445	$2,300
Salaries and maintenance per capita of enrollment	$82	$77	$99	$65
Total enrollment	3,425	3,874	906	4,188
Average daily attendance	2,625	2,151	714	3,115
Number of teachers	124	90	33	101
Enrollment per teacher	27.6	31.9	27	41
Attendance per teacher	21	24.9	21.6	30.8
Total salaries	$102,514	$88,000	$27,775	$94,403
Average salary	$826	$755	$841	$935 [1] $77
Cost for teachers per capita of—				
Enrollment	$29	$23.06	$30.06	$22.05
Attendance	$38	$31.06	$38.09	$30.03
Cost per capita per hour ..... cents	3.6	2.8	3.5	2.3
Days of school	190	200	200	200
Maintenance	$54,000	$32,000	$17,000	$56,889
Cost for maintenance per capita of—				
Enrollment	$15	$11	$18	$13
Attendance	$20	$14	$23	$18
Total cost per capita of—				
Enrollment	$44	$34	$49	$36
Attendance	$58	$46	$62	$48
Improvements	$40,000	$125,000	$3,000	$210,345
School property	$840,000	$420,000	$220,000	$831,000
School property per capita of—				
Enrollment	$245	$145	$243	$198
Attendance	$320	$195	$308	$267
School property, less debt	$735,000	$195,000	$150,000	$232,800
Valuation of all property	$10,400,000	$7,828,009	$7,887,000	$20,000,000
Valuation per capita of—				
Enrollment	$3,026	$2,727	$8,715	$4,775
Attendance	$3,983	$3,639	$11,046	$6,420
Levy	$1.53	$1.15	$0.65	$1.00

[1] The $77 represents the average amount of extra pay earned by Gary teachers for evening and Saturday work.

NOTES.

1. Maintenance includes overhead charges, fuel, light, and water, supplies, repairs, insurance, equipment, replacement, janitor service, etc.

2. The four cities of Hammond, East Chicago, Whiting, and Gary constitute practically one industrial community. Living costs are higher in Gary than in the other cities. Gary and East Chicago are recently established cities, while Hammond and Whiting are much older.

3. The enrollment and attendance per teacher in the other cities are lower than Gary on account of their having supervisors who are included in the calculation.

4. Comparisons are based on figures for 1912–13.

BULLETIN OF THE BUREAU OF EDUCATION.

[NOTE.—With the exceptions indicated, the documents named below will be sent free of charge upon application to the Commissioner of Education, Washington, D. C. Those marked with an asterisk (*) are no longer available for free distribution, but may be had of the Superintendent of Documents, Government Printing Office, Washington, D. C., upon payment of the price stated. Remittances should be made in coin, currency, or money order. Stamps are not accepted. Documents marked with a dagger (†) are out of print.]

1906.

†No. 1. Education bill of 1906 for England and Wales as it passed the House of Commons. Anna T. Smith.
*No. 2. German views of American education, with particular reference to industrial development. William N. Hailmann. 10 cts.
*No. 3. State school systems: Legislation and judicial decisions relating to public education, Oct. 1, 1904, to Oct. 1, 1906. Edward C. Elliott. 15 cts.

1907.

†No. 1. The continuation school in the United States. Arthur J. Jones.
*No. 2. Agricultural education, including nature study and school gardens. James R. Jewell. 15 cts.
†No. 3. The auxiliary schools of Germany. Six lectures by B. Maennel.
†No. 4. The elimination of pupils from school. Edward L. Thorndike.

1908.

†No. 1. On the training of persons to teach agriculture in the public schools. Liberty H. Bailey.
*No. 2. List of publications of the United States Bureau of Education, 1867-1907. 10 cts.
*No. 3. Bibliography of education for 1907. James Ingersoll Wyer, jr., and Martha L. Phelps. 10 cts.
†No. 4. Music education in the United States; schools and departments of music. Arthur L. Manchester.
*No 5. Education in Formosa. Julean H. Arnold. 10 cts.
*No. 6. The apprenticeship system in its relation to industrial education. Carroll D. Wright. 15 cts.
*No. 7. State school systems: II. Legislation and judicial decisions relating to public education, Oct. 1, 1906, to Oct. 1, 1908. Edward C. Elliott. 30 cts.
No. 8. Statistics of State universities and other institutions of higher education partially supported by the State, 1907-8.

1909.

*No. 1. Facilities for study and research in the offices of the United States Government in Washington. Arthur T. Hadley. 10 cts.
No. 2. Admission of Chinese students to American colleges. John Fryer.
*No. 3. Daily meals of school children. Caroline L. Hunt. 10 cts.
†No. 4. The teaching staff of secondary schools in the United States; amount of education, length of experience, salaries. Edward L. Thorndike.
No. 5. Statistics of public, society, and school libraries in 1908.
*No. 6. Instruction in the fine and manual arts in the United States. A statistical monograph. Henry T. Bailey. 15 cts.
No. 7. Index to the Reports of the Commissioner of Education, 1867-1907.
*No. 8. A teacher's professional library. Classified list of 100 titles. 5 cts.
*No. 9. Bibliography of education for 1908-9. 10 cts.
No 10. Education for efficiency in railroad service. J. Shirley Eaton.
*No. 11. Statistics of State universities and other institutions of higher education partially supported by the State, 1908-9. 5 cts.

1910.

No. 1. The movement for reform in the teaching of religion in the public schools of Saxony. Arley B. Show.
No. 2. State school systems: III. Legislation and judicial decisions relating to public education, Oct. 1, 1908, to Oct. 1, 1909. Edward C. Elliott.
†No. 3. List of publications of the United States Bureau of Education, 1867-1910.
*No. 4. The biological stations of Europe. Charles A. Kofoid. 50 cts.
*No. 5. American schoolhouses. Fletcher B. Dressler. 75 cts.
†No. 6. Statistics of State universities and other institutions of higher education partially supported by the State, 1909-10.

1911.

*No. 1. Bibliography of science teaching. 5 cts.
*No. 2. Opportunities for graduate study in agriculture in the United States. A. C. Monahan. 5 cts.
*No. 3. Agencies for the improvement of teachers in service. William C. Ruediger. 15 cts.
*No. 4. Report of the commission appointed to study the system of education in the public schools of Baltimore. 10 cts.
*No. 5. Age and grade census of schools and colleges. George D. Strayer. 10 cts.
No. 6. Graduate work in mathematics in universities and in other institutions of like grade in the United States.
*No. 7. Undergraduate work in mathematics in colleges and universities. 5 cts.
*No. 8. Examinations in mathematics, other than those set by the teacher for his own classes. 5 cts.
No. 9. Mathematics in the technological schools of collegiate grade in the United States.
†No. 10. Bibliography of education for 1909–10.
†No. 11. Bibliography of child study for the years 1908–9.
*No. 12. Training of teachers of elementary and secondary mathematics. 5 cts.
*No. 13. Mathematics in the elementary schools of the United States. 15 cts.
*No. 14. Provision for exceptional children in the public schools. J. H. Van Sickle, Lightner Witmer, and Leonard P. Ayres. 10 cts.
*No. 15. Educational system of China as recently reconstructed. Harry E. King. 15 cts.
*No. 16. Mathematics in the public and private secondary schools of the United States. 15 cts.
†No. 17. List of publications of the United States Bureau of Education, October, 1911.
*No. 18. Teachers' certificates issued under general State laws and regulations. Harlan Updegraff. 20 cts.
No. 19. Statistics of State universities and other institutions of higher education partially supported by the State, 1910–11.

1912.

*No. 1. A course of study for the preparation of rural-school teachers. Fred Mutchler and W. J. Craig. 5 cts.
*No. 2. Mathematics at West Point and Annapolis. 5 cts.
*No. 3. Report of committee on uniform records and reports. 5 cts.
*No. 4. Mathematics in technical secondary schools in the United States. 5 cts.
*No. 5. A study of expenses of city school systems. Harlan Updegraff. 10 cts.
*No. 6. Agricultural education in secondary schools. 10 cts.
*No. 7. Educational status of nursing. M. Adelaide Nutting. 10 cts.
*No. 8. Peace day. Fannie Fern Andrews. [Later publication, 1913, No. 12.] 5 cts.
*No. 9. Country schools for city boys. William S. Myers. 10 cts.
*No. 10. Bibliography of education in agriculture and home economics. 10 cts.
†No. 11. Current educational topics, No. I.
†No. 12. Dutch schools of New Netherland and colonial New York. William H. Kilpatrick.
*No. 13. Influences tending to improve the work of the teacher of mathematics. 5 cts.
*No. 14. Report of the American commissioners of the international commission on the teaching of mathematics. 10 cts.
†No. 15. Current educational topics, No. II.
*No. 16. The reorganized school playground. Henry S. Curtis. 5 cts.
*No. 17. The Montessori system of education. Anna T. Smith. 5 cts.
*No. 18. Teaching language through agriculture and domestic science. M. A. Leiper. 5 cts.
*No. 19. Professional distribution of college and university graduates. Bailey B. Burritt. 10 cts.
*No. 20. Readjustment of a rural high school to the needs of the community. H. A. Brown. 10 cts.
*No. 21. Urban and rural common-school statistics. Harlan Updegraff and William R. Hood. 5 cts.
No. 22. Public and private high schools.
No. 23. Special collections in libraries in the United States. W. Dawson Johnston and Isadore G. Mudge.
*No. 24. Current educational topics, No. III. 5 cts.
†No. 25. List of publications of the United States Bureau of Education, 1912.
†No. 26. Bibliography of child study for the years 1910–11.
No. 27. History of public-school education in Arkansas. Stephen B. Weeks.
*No. 28. Cultivating school grounds in Wake County, N. C. Zebulon Judd. 5 cts.
No. 29. Bibliography of the teaching of mathematics, 1900–1912. David Eugene Smith and Charles Goldziher.
No. 30. Latin-American universities and special schools. Edgar E. Brandon.
No. 31. Educational directory, 1912.
No. 32. Bibliography of exceptional children and their education. Arthur MacDonald.
†No. 33. Statistics of State universities and other institutions of higher education partially supported by the State, 1912.

1913.

No. 1. Monthly record of current educational publications, January, 1913.
*No. 2. Training courses for rural teachers. A. C. Monahan and R. H. Wright. 5 cts.
*No. 3. The teaching of modern languages in the United States. Charles H. Handschin. 15 cts.
*No. 4. Present standards of higher education in the United States. George E. MacLean. 20 cts.
*No. 5. Monthly record of current educational publications. February, 1913. 5 cts.

*No. 6. Agricultural instruction in high schools. C. H. Robison and F. B. Jenks. 10 cts.
*No. 7. College entrance requirements. Clarence D. Kingsley. 15 cts.
*No. 8. The status of rural education in the United States. A. C. Monahan. 15 cts.
*No. 9. Consular reports on continuation schools in Prussia. 5 cts.
*No. 10. Monthly record of current educational publications, March, 1913. 5 cts.
*No. 11. Monthly record of current educational publications, April, 1913. 5 cts.
*No. 12. The promotion of peace. Fannie Fern Andrews. 10 cts.
*No. 13. Standards and tests for measuring the efficiency of schools or systems of schools. Report of the committee of the National Council of Education. George D. Strayer, chairman. 5 cts.
No. 14. Agricultural instruction in secondary schools.
*No. 15. Monthly record of current educational publications, May, 1913. 5 cts.
*No. 16. Bibliography of medical inspection and health supervision. 15 cts.
*No. 17. A trade school for girls. A preliminary investigation in a typical manufacturing city. Worcester, Mass. 10 cts.
*No. 18. The fifteenth international congress on hygiene and demography. Fletcher B. Dresslar. 10 cts.
*No. 19. German industrial education and its lessons for the United States. Holmes Beckwith. 15 cts.
No. 20. Illiteracy in the United States.
†No. 21. Monthly record of current educational publications, June, 1913.
*No. 22. Bibliography of industrial, vocational, and trade education. 10 cts.
*No. 23. The Georgia Club at the State Normal School, Athens, Ga., for the study of rural sociology. E. C. Branson. 10 cts.
*No. 24. A comparison of public education in Germany and in the United States. Georg Kerschensteiner. 5 cts.
*No. 25. Industrial education in Columbus, Ga. Roland B. Daniel. 5 cts.
*No. 26. Good roads arbor day. Susan B. Sipe. 10 cts.
*No. 27. Prison schools. A. C. Hill. 10 cts.
*No. 28. Expressions on education by American statesmen and publicists. 5 cts.
*No. 29. Accredited secondary schools in the United States. Kendric C. Babcock. 10 cts.
*No. 30. Education in the South. 10 cts.
*No. 31. Special features in city school systems. 10 cts.
*No. 32. Educational survey of Montgomery County, Md. 10 cts.
†No. 33. Monthly record of current educational publications, September, 1913.
*No. 34. Pension systems in Great Britain. Raymond W. Sies. 10 cts.
*No. 35. A list of books suited to a high-school library. 15 cts.
*No. 36. Report on the work of the Bureau of Education for the natives of Alaska, 1911–12. 10 cts.
No. 37. Monthly record of current educational publications, October, 1913.
No. 38. Economy of time in education.
No. 39. Elementary industrial school of Cleveland, Ohio. W. N. Hailmann.
*No. 40. The reorganized school playground. Henry S. Curtis. 10 cts.
No. 41. The reorganization of secondary education.
No. 42. An experimental rural school at Winthrop College. H. S. Browne.
*No. 43. Agriculture and rural-life day; material for its observance. Eugene C. Brooks. 10 cts.
*No. 44. Organized health work in schools. E. B. Hoag. 10 cts.
No. 45. Monthly record of current educational publications, November, 1913.
*No. 46. Educational directory, 1913. 15 cts.
*No. 47. Teaching material in Government publications. F. K. Noyes. 10 cts.
*No. 48. School hygiene. W. Carson Ryan, jr. 15 cts.
No. 49. The Farragut School, a Tennessee country-life high school. A. C. Monahan and Adams Phillips.
No. 50. The Fitchburg plan of cooperative industrial education. M. R. McCann.
No. 51. Education of the immigrant.
*No. 52. Sanitary schoolhouses. Legal requirements in Indiana and Ohio. 5 cts.
No. 53. Monthly record of current educational publications, December, 1913.
No. 54. Consular reports on industrial education in Germany.
No. 55. Legislation and judicial decisions relating to education, October 1, 1909, to October 1, 1913. James C. Boykin and William R. Hood.
*No. 56. Some suggestive features of the Swiss school system. William Knox Tate. 25 cts.
No. 57. Elementary education in England, with special reference to London, Liverpool, and Manchester. I. L. Kandel.
No. 58. Educational system of rural Denmark. Harold W. Foght.
No. 59. Bibliography of education for 1910–11.
No. 60. Statistics of State universities and other institutions of higher education partially supported by the State, 1912–13.

1914.

*No. 1. Monthly record of current educational publications, January, 1914. 5 cts.
No. 2. Compulsory school attendance.
*No. 3. Monthly record of current educational publications, February, 1914. 5 cts.
No. 4. The school and the start in life. Meyer Bloomfield.

No. 5. The folk high schools of Denmark. L. L. Friend.
No. 6. Kindergartens in the United States.
No. 7. Monthly record of current educational publications, March, 1914.
No. 8. The Massachusetts home-project plan of vocational agricultural education. R. W. Stimson.
No. 9. Monthly record of current educational publications, April, 1914.
No. 10. Physical growth and school progress. B. T. Baldwin.
No. 11. Monthly record of current educational publications, May, 1914.
No. 12. Rural schoolhouses and grounds. F. B. Dressler.
No. 13. Present status of drawing and art in the elementary and secondary schools of the United States. Royal B. Farnum.
No. 14. Vocational guidance.
No. 15. Monthly record of current educational publications. Index.
No. 16. The tangible rewards of teaching. James C. Boykin and Roberta King.
No. 17. Sanitary survey of the schools of Orange County, Va. Roy K. Flannagan.