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THE ELEMENTARY INDUSTRIAL SCHOOL
OF CLEVELAND, OHIO

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CLEVELAND NORMAL TRAINING SCHOOL



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THE ELEMENTARY INDUSTRIAL SCHOOL OF CLEVELAND, OHIO.

In his report for the year 1908, Dr. Andrew S. Draper, commissioner of education of the State of New York, established the fact that current school systems still confine themselves too exclusively to preparation for professional life; that, even where they have consented to consider the claims of commerce and of certain technical pursuits, the aim lies toward preparation for positions of management and control; and that neither in the elementary schools nor elsewhere do the trades and the industrial life of the people receive adequate attention.

It is gratifying to note that this inadequacy is more and more keenly felt and that efforts to supplement it are becoming more and more pronounced among public-spirited citizens, among employers and workers, parents and educational leaders. We meet these efforts in the form of private and public trade schools, apprentice schools, continuation schools, industrial schools, and in a variety of provisions for so-called vocational guidance; most hopefully, however, in distinct propositions and experiments looking to a reorganization of the public school with a view of meeting this need without loss, but rather with gain, to other vocational interests and to general liberal culture.

Among these experiments, the Elementary Industrial School of Cleveland challenges more than passing interest, not so much because of vastness of plan or results, but because of the direct bearing of its work upon certain fundamental shortcomings and traditional one-sidednesses of current systems.

Its organization was hastened by certain statistical data collated under the direction of Supt. W. H. Elson. He reports that, of the children—

enrolled in the first grade of the elementary schools for the 10 years between 1892-93 and 1901-2, 3 out of 10 went no further than the fourth grade, 4 out of 10 withdrew before reaching the fifth grade, 5 out of 10 failed to enter the sixth grade, 6 out of 10 failed to reach the seventh grade, while practically 3 out of every 4 were lost to the school before attaining the eighth grade.

Again, he says:

Taking the schools of Cleveland as a whole, it is found that of those entering the first grade 95 per cent leave without finishing the high school, 50 per cent withdraw before reaching the fifth grade, and 75 per cent before reaching the eighth grade, while of those who enter the high school 32.64 per cent leave before the second year and 64 per cent drop out before graduation.

With reference to retardation, he reports:

Our records show that in the Cleveland schools last year (1908-9) 17,984 children were behind their grades with respect to age, or 27.0 per cent, while of the total number of retarded pupils 57.12 per cent were behind one year, 26.67 per cent two years, 10.33 per cent three years, and 5.86 per cent four or more years. It appears also that every eighth child was during the past year going over his work for the second time, or was a "repeater." In the elementary schools alone there were 8,650 repeaters, or 14.51 per cent of the total registration.

Further analysis of such failure revealed the fact that in the majority of instances these failures were due not so much to lack of ability on the children's part, but rather to failure to consider the needs of hand-minded or practical-minded children on the part of the current system in its one-sided attention to the language-minded and imaginative, in its excessive reliance upon the imagery of words and abstractions rather than upon the actualities of concrete life, both in learning and in doing.

Elsewhere it had been observed that hand-minded children who had gained in their classes the reputation of dullards, and who had themselves lost faith in their powers, were restored to confidence and learned to make satisfactory progress even in previously distasteful subjects, when opportunity came to them to exercise their powers in matters that appealed to their mental constitution and seemed to them worth while. If such children are to be afforded an opportunity to make the best of themselves, they must be approached from the side of the practical; they must learn by doing and in order to do. Thus alone can they be led to the "cultural," to the discovery of the inestimable value of knowledge, of science, of art, and even of the pursuit of these for their own sake. Thus alone can the school hope to place them in full possession of their human inheritance, to reach and to stir into full self-active life every phase of their mental constitution.

THE OPENING OF THE SCHOOL.

Such considerations led the school authorities to undertake the establishment of an Elementary Industrial School in the fall of 1909, as an experiment in the direction indicated. Primarily, by means of suitable differentiation in the course and character of the work with the beginning of the seventh grade, it was to afford practical-minded "dullards" opportunity to find themselves and thus to open

a way for checking the flood of waste from apparently hopeless retardation and failure, and incidentally, perhaps, for closer adjustment of the school system as a whole to the needs of the new industrial age.

The school was opened in a commodious 10-room building connected with the Brownell School, a central location. Its advantages were extended to children not under 13 years of age and stranded in the sixth grade and not less than two years behind grade. The principals of the elementary schools were requested to recommend a given number of boys and girls who in their judgment would be benefited by the transfer. The consent of parents was obtained chiefly on the plea that the children would have a better chance for progress and promotion.

In this way a school of 93 boys and 48 girls was organized in eight classes, five for the boys and three for the girls. For exceptional reasons a few younger children had been admitted; so that their ages ranged from 12 to 17; the average age of the boys was 14.3 years, that of the girls 14.1 years; 37 of the girls and 63 of the boys were foreign-born or had foreign-born parents. All had been rather unsuccessful in their school work, had lost interest in the studies and confidence in their abilities. They were reported to be poor in arithmetic, in writing, in spelling, in all their book work; and, in a number of instances, they had been difficult to control.

The school, as already indicated, was not to be a mere vocational or trade school. Industrial considerations were, indeed, to lead, and the practical tendencies of the pupils were to be appealed to and emphasized both in handwork and in academic work: throughout they were to revel, as it were, in practical efficiency. Yet, at the same time, no effort was to be spared to touch and reach the deeper springs of personality, of manly and womanly qualities in the pupils, to lead them to an appreciation of the social and æsthetic value of work, to spiritualize their growing efficiency with elements of good will and joy.

TIME SCHEDULE AND COURSE OF STUDY.

It was decided to extend the school day from 8.30 to 3.30. This time was divided into nine periods, one of which was assigned to luncheon. This left 40 periods per week for instruction and practice. One-half of these were devoted to English, mathematics, geography—history—the two in close correlation—and to hygiene of a thoroughly practical character. The other half were given to manual and industrial work, to domestic economy and gymnasium practice. There were shower baths, a swimming pool, and an auditorium for assembly, exercises—rhetorical, musical, stereoscopic, and general.

Instruction is departmental; the sexes are segregated, and no attempt is made to give classes of boys and girls the same treatment in any subject of instruction.

In closer detail the course of study, as elaborated up to the present, deals with the following topics:

English.—Three-fifths of the time is devoted to reading, with stress upon thought study, upon material that will meet the needs of the classes, upon the memorizing of suitable selections, and upon catalogue reading. The remainder of the time is given to grammar, composition, spelling, and penmanship. Grammar is confined to essentials: Capitalization, punctuation, the formation of plurals and possessives, practice in the use of pronouns and verbs. Composition, oral and written, deals with matters of personal observation and with experience gained in the occupational work of the school, on class visits to municipal buildings and industrial plants, shopping excursions, etc.; with business correspondence and business forms; with specifications; with accounts of what has been read, etc. Occasionally a story that has been read is dramatized and presented for the benefit of the whole school, or programs showing the work and correlation of the different departments are arranged and presented.

Mathematics.—Fundamental processes, with ample practice in correlation with geography, shopwork, and household economy. Practice in short methods used in business and trades, with stress upon immediate practical application in connection with the occupational work of the school and the class visits to factories, banks, etc. Practice in writing and receipting bills, in best ways of marketing and keeping accounts, in reading meters and testing the accuracy of bills, in the use of deposit slips, bank checks, money orders, etc.; in profit and loss, simple interest, taxes, insurance, trade discount, and commission; in the use of the triangle in determining distance, the law of levers, the relative speed of parts of machines; in the subdivision of lines and angles, the drawing of tangents, construction of plane figures, mensuration in its various relations, the construction of graphs, etc.

Geography.—This study is closely correlated with the other departments: the study of foods, with cooking; fibers and textiles with sewing; woods, paints, varnishes, and glass with manual training. Visits are made to factories, shops, mills, and stores engaged in the industry or dealing in the products under discussion. In the study periods, outline maps are shaded, showing regions yielding wheat, corn, cotton, and other products under consideration.

During the first year emphasis is placed upon the local geography of Cleveland—its location, surface features, climate, rocks, rivers, modes of transportation, etc. This leads, through industrial necessities, to the consideration of our country's more important industries.

During the second year, the subjects studied by the girls and boys vary. The girls lay stress upon cotton, wool, flax, silk, cacao, coffee, tea, sugar, spices, salt, rice, barley, rye, wheat, vegetables, nuts, fisheries, etc.; the boys upon tropical woods, paints and varnishes, building stones, brick making, the manufacture of glass, heating methods, lighting methods, important minerals, paper, printing, rubber, etc.

History.—This is taught in close correlation with geography, the two being united by the school under the term "geography-history."

During the first year the chief stress lies upon facts that have developed our country commercially and industrially. This involves: The founding of Cleveland by settlers from Connecticut; the settling of the New World by European nations; a comparison of the characteristics, customs, and industrial life of

these; the growth of English supremacy; the separation of the colonies from England; the comparison of the modes of life, in northern and southern colonies; the westward movement of the settlers; famous pioneers and principal routes followed by them; invention of steamboat and locomotive; incorporation of Cleveland as a city; detailed study of city government.

The second year deals with the formation of the United States; its government; a comparison of republican and monarchical forms of government; invention of the cotton gin; Louisiana Purchase; War of 1812, which gave us commercial status with European countries; the Cumberland and National Roads; the Erie Canal; the Spoils System and Civil Service Reform; acquisition of new territory by war and exploration; discovery of gold in California, and opening of region west of the Mississippi River; the Civil War and its results; introduction into the United States of new process of manufacturing steel; the Union Pacific Railroad; period of wonderful new inventions; growth of business corporations and labor organizations; War of 1898 and colonial acquisitions; industrial and commercial prosperity.

Drawing.—These courses are correlated with the work of every other department. The freehand drawing comprises drawings from nature in water-color, pencil, and crayon, with stress upon composition and harmony of color, analysis of plant forms for use in design, and the representation of simple objects in perspective and view drawing.

Design, for boys, is applied to book covers, portfolios, boxes, posters, stained-glass windows, woodworking problems, interior decoration, furniture, lettering, and illumination of texts. Girls apply it in household decoration, table linen, wall paper, rugs, draperies, simple embroidery for articles of clothing, stenciling and wood-block printing for cushions, needle cases, curtains, etc.

Mechanical drawing involves simple working drawings of objects previously made in the shop, showing the necessity for the arrangement of views, conventions of lines, dimensions, etc.; finished working drawings to scale from dimensioned sketches of designs for articles to be made afterwards in the shop; tracing and blue printing; charts illustrating machinery and processes of manufacture in connection with geography; illustrations of geometrical figures and devices for arithmetic work.

Shopwork.—This involves, in metal work, simple objects in copper, brass, and other soft metals, particularly fittings in woodwork, such as box corners, hinges, escutcheons, etc.

The course in preliminary woodwork deals with problems affording systematic use of tools and general principles of construction involved in simple projects of use and beauty. The course in advanced woodwork deals with cabinetmaking, wood turning, and pattern making.

The aim in printing is to give a general knowledge of the different kinds of work in the print shop. The boys turn out all of the printed forms for the school, as well as some text and commercial work.

In the second year boys may give the full time assigned to industrial work (about nine 80-minute periods per week) to specialization in mechanical drawing, cabinetmaking, pattern making, or printing.

For training in business methods, pieces of work are turned out in quantities as nearly as possible under factory conditions—cutting boards, jack boards, tool handles, and other equipment for manual-training centers; book racks, stools, bookcases, screens, frames, etc., for school use or for sale; commercial work in printing for school, and school activities. In all such work time cards are kept by the pupils, furnishing data for use in arithmetical work.

Household arts.—These courses deal with cookery in its varied interests, with sanitation, laundering, home nursing, household decoration, household accounts, sewing, darning and patching, and shopping.

Gymnasium.—Two periods per week are assigned to this work. Its aim is to remedy the effects of faulty posture, to give strength and agility to the body, to secure graceful movement, and to develop by the use of games a taste for healthy and clean sport.

EFFECT OF THE WORK UPON PUPILS.

The effect of the work upon the pupils proved to be full of encouragement. Under the stimulus of kindly and consistent discipline, of patient and persistent faith in their ability on the part of carefully selected teachers, and under the influence of work that dealt with intelligible problems and appealed to tangible interests, the children soon found themselves. They discovered that they possessed abilities and capacities heretofore doubted, detected in their academic studies values bearing upon their immediate interests, and turned to these studies with feelings of good will heretofore foreign to them. As they gained in confidence they gained in poise. With increasing self-respect there came to them increasing respect for the school and its work. With growing recognition of the social value of personal efficiency they gained in individual self-assertion, coupled with a deepening sense of responsibility akin to enthusiasm.

Of far-reaching significance is the gain of the pupils in their academic work. Stolid indifference yielded to intelligent interest; discouragement and sullen apathy in the presence of difficulty to determined persistence and the fervor of achievement. General culture assumed new and enhanced value in its bearing upon success in special pursuits. Interested visitors failed to understand that these eager and alert workers and students could ever have borne the stigma of "dullards and incorrigibles." Parents who came to visit the school expressed themselves as much pleased, praised the growing interest of their children in academic as well as economic subjects, and extolled their improved helpfulness and general disposition at home. They seemed to revel in the new sensation of pride in the work and progress of their children.

A concomitant result of this growing appreciation of the value of school was found in the steady increase in regularity of attendance. The significance of this gain is enhanced when it is remembered that a number of the pupils come from distances, involving trolley trips of from 6 to 7 miles each way, and others must walk 3 or 4 miles to and from school every day.

A lingering misapprehension, perfectly natural in view of the origin of the school, that membership in its classes implied dullness or worse, was overcome so completely before the close of the first year that the opening of the second year brought a number of volun-

tary and persistent applications from "bright" children. Moreover, a number of the pupils of the first-year course had gained so much interest in school education that on returning to school for the second-year course they expressed eagerness to prepare for entrance in the Technical High School.

WHAT SOME OF THE PUPILS HAD TO SAY.

A few weeks after the beginning of the second year of the school the writer of this sketch devoted several days to the inspection of the school. In the course of his investigations he requested a group of 27 girls and a group of 37 boys, all of them members of second-year classes, to state freely in a letter addressed to him, and closed without revision by the teacher, what benefit, if any, they had derived from transfer to this school and what were their favorite subjects of work and study.

The following extracts from the letters of the girls will indicate the spirit of their answers:

I like the school because the teachers teach the studies we most need, especially the boys and girls who want to earn their own living.

I find that I have improved in the subject which seemed to halt my progress in school. This subject is arithmetic, and I am grateful to the teachers and the school for their help.

The school work is told so interestingly that we can use it out of school.

I like the school because it has helped me to get good marks and be good to home folks.

The school has taught me to be useful in the home and to be neater in my work than I used to be.

I hope this school will help me more every day, so that I may be more useful when I grow older.

Here we learn to sew and to cook, and we learn arithmetic and geography that we will use out in life.

Our arithmetic and other studies are given us in a way that will help when we are grown up.

This school has helped me to wish to be helpful to others, and it has taught me to work so that when I am at home I can help my mother.

The teachers here speak to us like grown-up sisters. They tell us what we should do in a way that makes us feel at home.

I enjoy coming here, because the lessons are more businesslike.

Since I came here I have learned more than in the seven years at grade school, especially in arithmetic.

I like this school because I never could have learned anything, and I am more use in the world. I learned to be a lady.

Out in the grade schools I felt as if I just wanted to stop, but here the work is so interesting that I don't like to leave it.

The school has helped me in what I needed most, obedience and behavior.

Cooking and sewing were named as favorite subjects by 21; gymnasium practice and swimming by 8; geography by 6; arithmetic by

10; English by 9; drawing by 5. Six of the girls were looking forward with eager interest to the millinery of the second year.

The letters obtained from the boys yield the following more or less significant hints:

The lessons were so interesting that I felt as if I were taking a new hold in life.

I am more busineslike than I was before and can do my work much better.

The school has taught me what an education means in life.

We do not sit in one room all the time, and we have the privilege of changing classes.

The school has made me be more of a man; it has made me have more self-respect and responsibility.

I like the shopwork because it gives me something to do with my hands.

The six hours in this school pass quicker than the five hours in the other school.

It makes me more respectful, and the work is more of the kind I like.

If the industrial school continues to be used to make men of boys, it will soon be of great value.

In making things at home I have more confidence in myself.

It has learned me to have better manners and to do better arithmetic and lots of other things.

I learned to be more obedient, and my parents say: "You seem to be learning more than you used to learn."

The school has made a man of me.

The school has helped me to think and to get my work more easily.

I like it because it is in the line of work I will follow. [Several boys express this thought. Others see in the work good preparation for the Technical High School, and one of these for subsequent attendance upon a course in scientific farming at the Ohio State University.]

It has not only helped me in learning a trade, but to get along better in my other studies.

It has taught me to like school. I like all the work we have.

Among the favorite subjects mechanical drawing is mentioned by 26, woodwork by 18 of the boys. Seven boys praise the fact that they do not have to sit in one room all day. One boy criticizes "the poor location" of the school, but is otherwise much pleased.

Clearly there had been distinct awakening in the life of these children under the stimulus of the new work. There are evidences of gain in sustained interest and purposeful effort extending even to so-called academic work. Stress is laid by the children on their gain in general interest, on the practical value of the school as they see it, on their improvement in obedience and "behavior," in self-respect and renewed confidence in their ability, a conviction that they amount to something. A few attribute this to the industrial and economic features of the work; others to the helpful attitude of the teachers; still others to the departmental organization of the school,

which does away with the feeling of constraint in being confined in one room "the whole day" and gives opportunity for the mental relief that comes from change of environment. Evidently the feeling of dawning manhood and womanhood with its "sweet responsibilities" had come to these children. They had tasted the proud privilege of self-education. Their school was to them no longer a fancied preparation for a life far in the future, but had every characteristic of an actual life as they saw it and had come to evaluate it in relation to their own inclinations and hopes.

Interviews with teachers who had guided the work corroborated the expressions of these children. Their testimony indicated that the change in the attitude of the pupils toward the school, including its academic work, was due in large measure to the prominence given to industrial and economic work. This appealed to the practical tendencies and interests of these pupils, made the school worth while to them, "kept them at school" as one of the teachers expresses it, "and gave us a chance to keep at them." Moreover, the academic work itself was approached at points of contact with industrial and economic problems. This enabled the pupils to appreciate its value and its need in the achievement of their expanding ideals. To this should be added the strong individual interest of the teachers in the children, the continuous and reverent study of each and all in order "to get at them from within," letting them feel under the stimulus of eager justice and manifest kindness that the school liked them, believed in them and in their worth and ability. Without doubt, too, the effectiveness of this individual interest was aided by the fact that the classes were smaller than those in the current graded school.¹

A few quotations from letters recently addressed to the writer by some of these devoted teachers will bring these statements into stronger relief. One of these, who has been with the school since its establishment, writes as follows:

Some of these children seemed to have lost all faith in their own ability. They were brought to the school by parents who expressed the hope that "this last experiment" will prove successful and that the boy or girl "will now get along in school and secure an education." It is most interesting to follow these and to notice the change in them, when they begin to realize that their past record is not known or heeded by the faculty, that here they have a chance to begin anew, that the teachers have a special interest in each pupil, that the boys or girls are encouraged to ask questions, and that the work fits their natural tastes and satisfies present and future needs.

Realizing that they can make good in one or more subjects and that the teachers have faith in them, they rapidly gain self-confidence and become happy

¹ The school is organized on the departmental plan, with special teachers for the several subjects of study and work. Mechanical drawing, woodwork, sewing, cooking, English, geography, history, a half-time teacher for art and another for printing, and special teachers for gymnastics and singing. Except in the last two subjects, the number of pupils in any one class does not exceed 30.

and industrious. In fact this change is so marked in many cases that in eight weeks the expression of their countenances is permanently changed for the better, and their carriage and general appearance are similarly improved. In a few cases in which this change failed to be noted I investigated and found in each instance that the child was depressed by home conditions.

Another teacher points out a difference between the first and second year students:

The second-year students, as a whole, show initiative, executive ability, poise, and a general intelligence far in advance of the first-year pupils. Also, while in the matter of discipline it is frequently necessary to reprimand first-year pupils, this is of rare occurrence with second-year classes. Apparently, the school has succeeded in establishing an abiding interest in work and a feeling of self-respect as well as of respect for the school.

Still another adduces the testimony of parents as to the change of attitude in the life of the boys:

Several parents have come to us and testified that since their boys have come to this school they are more obedient and truthful and more thoughtful of their parents at home. Truancy is less prevalent than in the other elementary schools. A number of boys admitted to me that they used to be truants, but that since they had come to this school they had not missed a day. They showed great pride in these statements. Evidently the pupils are interested in their work and, what is equally noticeable, in each other's work. They help each other. Frequently, when a pupil has done exceedingly well, I hear of it from others. In class these "retarded children" soon lose their timidity. They no longer hesitate to recite and to express opinions for fear of a mistake.

In this connection it is interesting to note that in many instances pupils who withdraw from the school before graduation do so unwillingly, yielding only to the urgent demands of parents who need their aid as wage earners.

It is to be regretted that, as yet, detailed and systematic statistics as to the success of graduates and others in subsequent work are not available. A system of "following up," however, is planned by Prof. Lytton S. Beman, the efficient director of the school, to whose judgment and zeal its successful development is largely due.

In the meanwhile, enough information is at hand to warrant the inference that the school is meeting quite satisfactorily the expectations of its friends. The progress of graduates who have entered the technical and commercial high schools is reported to be quite satisfactory. They easily hold their own, and in many instances show themselves superior in intellectual grasp and executive ability and noticeable for their earnestness and poise. Graduates who go to work immediately after graduation usually do so after careful inquiry as to the character of the work, its sanitary conditions, its outlook, etc., under guidance of the teachers. They earn from \$12 to \$20 per week and soon attain the respect and confidence of their employers.

Concerning those who go to work or are forced into it before graduation, accounts are very meager, although on the whole favorable. A notable fact is that the majority of these, as well as of the graduates at work, seek every opportunity to gain additional information and practice in evening schools and other supplementary schools.

There is much complaint from teachers, parents, and pupils about the location of the school. It is stated that the district is one of the worst in the city; that there are a number of immoral houses in the vicinity of the school; that from a sanitary point of view the immediate neighborhood is objectionable; that there is no room for playground or for school gardens, because on one side there are crowded dwellings each harboring many numerous families, on another there are stables and warehouses separated from the school building by narrow alleys, and the remaining two sides face streets.

It is stated, however, that the school authorities are fully aware of these drawbacks and planning to remedy the evil. With this in view, it is proposed to transfer the school to a special building favorably located and fully equipped for its specific purpose and provided with ample space for playgrounds and a school garden. Moreover, the benefits so far derived from the work of this school, in spite of its drawbacks, are said to have stimulated a desire, ripening into purpose, to establish similar centers in other parts of the city.

There is even a proposition to extend the course of work of such schools and to give to the added year or years a distinctly vocational or trade-school character, with stress possibly upon electric work, printing, drafting, cabinetmaking, patternmaking, the building trades, gardening, or other local needs, and all this with increased emphasis upon civic and other cultural interests.

STATISTICAL HISTORY.

The statistical account of the history of the school since its organization in 1909 presents a number of problems that call for explanation. The statistical data are presented below; these, as well as the accompanying available explanations, the writer owes to Lytton S. Beman, the efficient director of the school.

The total enrollment for the first year (1909-10) was 152—108 boys and 46 girls. Of these, 51 withdrew in the course of the year to go to work, 1 on account of sickness, and 1 left the city. Of the remainder, 96 were promoted to advanced classes, and 3 who had entered during the latter half of the year could not be promoted.

The enrollment for the second year was 177—121 boys and 56 girls. Of these, 27 withdrew in the course of the year to go to work and 6 on account of illness. Of the remainder, 53 were graduated, 68

were promoted to advanced classes, and 20 continued in their classes as above. Of the graduates, 22, or 41.5 per cent, entered advanced schools of secondary rank the following year.

The enrollment for the third year was 186—140 boys and 46 girls. Of these, 40 withdrew during the year to go to work, 1 on account of illness, and 3 left the city. Of the remainder, 37 were graduated, 64 were promoted to advanced classes, and 41 were continued in their classes as above. Of the graduates, 20, or 54 per cent, entered advanced schools.

The enrollment for the fourth year was 186—132 boys and 54 girls. Of these, 27 withdrew during the year to go to work, 16 on account of illness, and 1 was dismissed. Of the remainder, 28 were graduated, 121 are promoted to advanced classes, and 21 are continued in their classes as above. Of the graduates, 21, or 75 per cent, have declared their intention to enter advanced schools.

After the first year, and still more extensively after the second year, the school, yielding to pressure from principals and parents, consented to receive pupils who were retarded in the sixth grade and who had reached the age of 13; in some instances this privilege was extended even to fifth-grade pupils. Moreover, these pupils entered at odd times in the course of the year. This will account in a large measure for the increase in the number of nonpromotions at the close, more especially, of the second and third years. It also had a distinct bearing on the decrease of withdrawals in order to go to work and upon the decrease in the relative number of graduates in the third and fourth years, in spite of increase in enrollment.

At the beginning of the fourth school year (1912-13), a change in the administration of the public schools took place. In consequence of this the distribution of application cards for entrance in the industrial school was overlooked; and this resulted in a sudden reduction in the number of entrances at the beginning of this year. The first semester, indeed, showed an enrollment of only 130 pupils—86 boys and 44 girls. Although during the second semester this loss was retrieved, the interruption resulted in a notable reduction in the number of graduates at the close of the year. Possibly the increase in the number of withdrawals in order to go to work from 27 in the second to 40 in the third school year is partly due to the same cause, since six months had intervened between the outgoing of the old and the incoming of the new administration.

The phenomenal increase in the number of promotions to advanced classes in the fourth year of the school—121 as against 64 in the third year—will find its explanation in the fact that, because of reduction in the number of pupils assigned to the respective classes during

the first semester, the teachers found it possible to emphasize special attention to individual pupils.

It is interesting to note that in spite of disturbing influences, indicated above, the percentage of transfers of graduates to schools of high-school rank increased steadily throughout the three years, rising from 43 per cent of the first class of graduates to 75 per cent of the last class.

CONCLUSION.

The success of the experiment, even in the face of adverse conditions, does not imply criticism of the work of the teachers in the ordinary school with its dominating attention to language, literature, history, and the abstractions of arithmetic. Nor does it imply that these and other so-called cultural subjects of interest should receive less attention. Language and its offspring, history and literature, constitute, indeed, the highest possessions of man; and the control of number relations is indispensable in man's adjustment to the finite universe to which his earthly life is confined. Yet his control of nature and life, as well as the dawn of reason and sentiment and the very birth of language, are primarily connected with the use of his hands and their reinforcement by tools. Even to-day, indeed, humanity as a whole depends for the continuance and increase of this control upon tool-using activities, to which the great majority of human beings must devote their energies. Thus it happens that under the joint influence of heredity and environment the children born to humanity are, primarily if not predominantly, hand-minded, eager for manual experiment and self-expression.

In the family, in the kindergarten, and primary school this is more or less intelligently recognized. Their handwork, however, remains confined largely to the symbolism of play; it rarely touches industrial or other economic value. Later on, and more especially in the grammar grades, this work is abandoned, and the manual training that takes its place is so limited in scope, so wholly divorced from the bulk of the class work, and so incidental that it fails to meet the eminently hand-minded pupils. Hence the perfunctoriness, the slow progress, the lack of ability to retain and to apply on the part of these pupils. Hence, too, irritability and apathy with regard to the progress of these on the part of teachers.

In a large measure the very history of the prevailing type of school accounts for this. The school was born among and for the language-minded. Intellectual and physical culture—not manual self-expression and economic insight—was its aim. The industrial worker was practically excluded from it; he had no leisure for it, no

time to engage in its play. This one-sidedness still clings to the school, and it is hard to eradicate in its appeal to the imagery of words and abstractions, its indifference to the concrete actualities of life.

In reading, all but exclusive stress is upon literature; the story and some descriptive matter usurp attention: interests that call for stimulus and information with reference to everyday needs and occupations, to science and engineering, to industrial and domestic work, to matters of environment, are slighted. The same applies largely to writing and arithmetic, although here the "business man" has secured a share of attention. Concrete geometry and mensuration, so valuable in industrial, domestic, technical, and agricultural life, are but transient incidents. The same neglect applies to matters of natural science; nature study and physiology appear, indeed, on some programs, but in time and importance assigned to them they yield to grammar and spelling, although in life the latter contribute much less to its prolongation and enjoyment than the former, which are, indeed, acquired by the majority quite incidentally. Geography and history, as a rule, deal quite insistently with everything but the immediate practical needs of life. There may be some drawing, but it is apt to be forced from the start into "high" art; it keeps away from the needs of the worker and rarely serves as a means for self-expression. Sporadically, we find manual training in some of the grammar grades, but the time assigned to it is inadequate and frequently the method of work is so painfully abstract and so far removed from the pupil's interests and needs that it sometimes becomes as hateful as grammar. At every point, indeed, the curriculum tends in matter and method to academic ends—the very term indicates their origin—rather than to the ends of practical life.

We need for professional ends and for the purposes of general culture much, if not all, of what the school of the usual sort holds high in its tradition. But, in addition to these things or, perchance, in the place of certain phases of them and in different form and distribution, we need, at least for the hand-minded contingent which is destined or preparing to deal with the industrial and commercial interests of humanity and with the progressive conquest and control of nature's forces—for these we need opportunity and guidance in the development of constructive, inventive, and creative skill and genius in the fields of activity, in which alone the best of each of them can become available.

The Cleveland Elementary Industrial School may not offer the best general solution, certainly not the only solution, of the problem involved in these considerations; but it does offer a solution that lies in a right direction and one which under certain conditions

affords great promise of success as an initiatory, if not as a permanent, measure. Beyond doubt, it proves clearly that with some types of mind retardation in the school as currently organized indicates neither fundamental dullness nor essential incorrigibility, but that these alleged defects represent reactions forced upon the children by faulty and inadequate modes of treatment, and that these traits readily yield and make room for the joyous unfolding of heretofore suppressed points of excellence in character and bearing.