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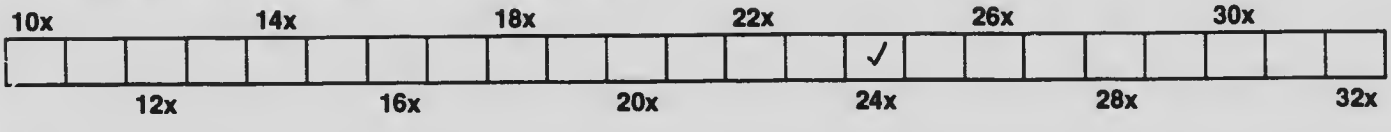

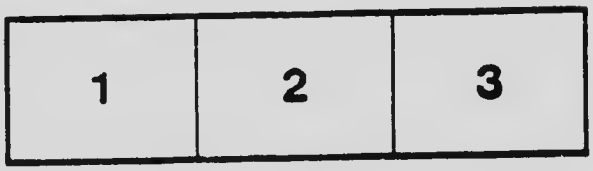

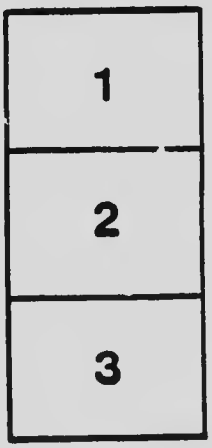

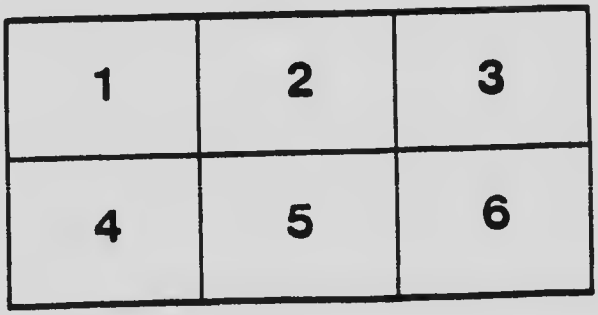

Learning How to Do

At the PUBLIC SCHOOL OF
INDUSTRIAL ART,
PHILADELPHIA, PA.

AND

Learning by Doing

At the HAMPTON NORMAL
AND AGRICULTURAL
INSTITUTE, HAMPTON, Va.

BY

THOMAS BENGOUGH, C.S.R.
TORONTO

"Science and Art are little by little identifying all Labor with Culture, thereby robbing it of the repulsiveness which it was the chief aim of that arch-snob and Philistine, Satan, to bring about."—Chas. G. Leland, A.M., F.R.G.S.

The Ideal Education

IN childhood and in the earliest period of education, have more care for the health of the body than for the mind, and for the moral character than for the intellectual. Let nothing base or servile, vulgar or disgraceful, meet the eye or assail the ear of the young; for from words to actions is but a step. Let their earliest and first impressions of all things be the best. Let them be taught fully all the essential elements of education, and as much of what is useful in a merely mechanical point of view as will have the effect of rendering the body, the soul, and the intellectual powers capable of arriving at the highest excellence of their respective natures. The merely useful, or absolutely necessary, matters of education are not the only ones that deserve attention, but to these should be added such as exalt and expand the mind and convey a sense of what is beautiful and noble. For to be looking everywhere to the merely useful, is little fitted to form an elevated character, or a liberal mind.– *Aristotle.*

Learning How to Do

AT THE

PUBLIC SCHOOL OF INDUSTRIAL ART, PHILADELPHIA, PA.

(The first in the United States to adopt Manual Training Methods,)
PROF. J. LIBERTY TADD, Director.

AND

Learning by Doing

AT THE

HAMPTON NORMAL AND AGRICULTURAL INSTITUTE, HAMPTON, VA.

(The first institution founded in the United States for the Education of the Negro and the Indian.)
REV. DR. FRIZELL, Principal.

An Investigation and Illustration of the Methods employed in the above Institutions in teaching Manual Training, Drawing, Industrial Art, Nature Study, Domestic Science and Agriculture.

By THOMAS BENGOUGH, C. S. R.
TORONTO.

WITH [illegible] JS ENGRAVINGS FROM PHOTOGRAPHS.

"Work will be introduced to schools, and children become familiarized with it, for whoever has learned to love it in youth in any form will never in later life yield to idleness, be his rank or station what it may. And then the moral and esthetic gain of the individual in the strife of life will show itself in the progress of the whole."—Karl Werner.

Published by Authority of the Education Department of Ontario,

TORONTO:
Printed and published by L. K. CAMERON,
Printer to the King's Most Excellent Majesty,
1902.

THE VALUE OF DESIGN.

(From Walter Crane's "Claims of Decorative Art.")

THE real secret of Continental influence in design upon us is no doubt to be found in the fact that the severance of the arts and handicrafts has never been anything like as complete in other European countries as in industrial England. Our great industrial rival, America, shows the same want of originating power in artistic design, the same tendency, but in a more marked degree, to avail herself of Parisian modes in art. However degraded the taste of the designer, or debased in type the design, the French or the Italian designer remained thoroughly in touch with the craftsman, and understood the technical conditions of the work thoroughly, so that his working drawings would be perfectly adapted to the method of manufacture. We have here, at any rate, one reason why our manufacturers have given preference to French designs, and have been so much in the habit of crossing the water for new supplies.

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THE VALUE OF ART.

(From the "Art Interchange," July, 1902.)

THERE are many who say, "We know nothing about art." This implies that they know little about life, that is, in its rounded sense. Then let us advise such to use the eyes God has given them, to look about them, to look at the first mother and child they meet, on the daily round, and then at a photograph of the Dresden Madonna, and see how art interprets that first woman's face upturned in the ecstasy of prayer, and then at the face of the Madonna of the "Assumption," and see how Titian interprets the relation of man to God.

Many of us, born in cities, learn to love beautiful nature through beautiful pictures, and to understand the beauty of the human form only through the artist's loving appreciation of it. Do not consider it too curiously, or trouble yourself with the cults and isms of art, but use your common sense and assume bravely your responsibility in the matter. If you find in the Dresden Madonna something more than mere paint, accept art as an interpreter of true religion. The fault is in ourselves if we are not receiving the consolation and inspiration of art. I would advise everyone to live constantly in the light of some great masterpiece, let it be but a small photograph of the Dresden Madonna or the "Assumption," and try its effect upon his life. You will find in this companionship something greater than you have yet imagined.

WARWICK BRO'S & RUTTER, PRINTERS,
TORONTO.

FOREWORD

THIS pamphlet is a humble but honest effort to reunite Utility with Art. In the early days of the race these two were joined, and produced those lovely and lasting effects which to this day are admired and copied by the whole world. But in these latter days Utility, with brawny arms, is so busy fighting for bread and butter in the bustling market-place that he has little time or inclination for the cultivation of esthetic taste, and thus he loses the refining influences of Art; while Art, deprived of the sturdy, masculine element of Utility, sits dawdling over her dilettante frippery and brie-à-brac. Our everyday handicraft has well nigh lost the spontaneous art of the potter, the weaver, the mason, which is being crushed out of existence by the factory system, with its division of labor and consequent lack of interest taken by the worker in his work.

The institutions herein reviewed may be taken to represent the two prime factors in all human life and education. Hampton bears in every lineament of its varied life the stamp of Utility, while Art permeates the atmosphere and predominates in all the work of the Public School of Industrial Art. Because love for and appreciation of beauty require special cultivation in a young country like Canada, where the tendency is necessarily towards the practical and utilitarian, I have given greater prominence to the latter institution.

It is interesting to note that since this pamphlet was written the Hampton authorities have, through their admirable monthly (*Southern Workman*, July, 1902), given their opinion of the Tadd methods in relation to their own as follows:—

"In these days when manual training and industrial courses of all kinds are being introduced into our schools, it is well to pause and ask how they shall be taught. Shall we keep our manual training courses entirely separate from the drawing and modelling that already have their place in most of our courses of study? Shall we teach our young people to make useful, even if ugly, things with their hands and confine our art ruction to what is recognized as ornamental? Or shall we combine art wit' adwork in such a way as to bring about what the Society of Arts and Crafts n...es as one of the results at which it aims—the developing of individual character in connection with artistic work? By no one, perhaps, are these questions more fully answered than by Prof. Tadd in his book, 'New Methods in Education.' . We wish especially to endorse Mr. Tadd's thought that we should first discover capacity and then educate it, instead of giving to all pupils alike the same kind of training. But we protest against the abolition of the 'useful model.' It seems to us that the useful should be retained, but should be made artistic. The author is quite right in condemning sloyd that places stress on the number : tools used and the number of models made, instead of upon the development of character in the pupils. And, most important of all, we believe, is the union that he insists upon of art and skill, the emphasis that he places on the educative value and moral influence of beautiful handwork. While we are aware that the influence of the Art Department on the other handwork at Hampton is not so much felt as we hope it will be in the future, we heartily approve of Mr. Tadd's position in this matter, and recommend consideration of his fundamental principles of education to all who are interested in the subject."

It will be seen from this extract that the Hampton and Tadd methods are complementary: hence the readers of this pamphlet will see both sides of the shield.

As to the value of Manual Methods in Education, evidence is constantly accumulating. The Southern Educational Conference, composed of leading educationists of the United States, in convention last April declared "its settled conviction that the training of the hand is of equal value with the training of the mind, and that the two should go together in public school work, both as a matter of discipline and as a matter of preparation for all those industries that are related to the natural economic development of the people." The *Southern Workman*, replying to an adverse criticism of Manual Training, says: "We have seen careless, inexact, listless boys and girls transformed into careful and painstaking students, largely through their manual training; and not only have these attributes been shown in this particular study, but in all their work. We have seen young people growing more truthful day by day, more persevering, more honest, and it is believed that these changes are due largely to the influence of their work." The recent book by Mr. Hanford Henderson, "Education and the Larger Life," has this striking testimony: "The little craftsmen who are just beginning their handwork are so manifestly helpless, it is almost pitiful to see the lack of co-ordination among their faculties, the absence of any real control of the organism. Where there is anything like normal material to work on the change is marvellous. Control takes the place of lack of control; sluggishness gives place to alertness, awkwardness to dexterity. It is not too much to say that the work of *human regeneration* is going on from day to day and before one's very eyes. Where handiwork had been employed for the betterment of deficient human material—the feeble-minded and the criminal—the change seems even more marvelous. The personal statements of the superintendents of the home at Elwyn, Pa., and of the reformatory at Elmira, N.Y., show that, in the one, manual training is most highly valued as a mental restorative, and in the other as a moral tonic." Coming nearer home, we have the following very strong testimony from Prof. D. K. Clarke, B.A., manual training teacher in Woodstock (Ont.) College, the pioneer manual training school in Canada: "There is a significance in the regularity with which students in manual training take a higher average standing in the regular college course than do other students. This year (1902) has not been an exception in that respect. The winners of the Governor-General's medal and the Henry Moyle medal, the two highest awards for proficiency in the final year, were both graduates of the Manual Training Department. Similarly, the winners of the scholarships for first rank in general

proficiency in the other years were all manual training students except one. This bears out the contention that a boy gets better control of all his mental faculties because of this practical training." Such strong and striking testimonies as the above—which could be indefinitely multiplied—should serve as a tonic to those who are fighting for the general introduction of these progressive methods in our schools.

The best points of both the Philadelphia and Hampton methods might be pleasantly and economically incorporated into our Ontario Public and High Schools, which would thereby be greatly enriched. The Leland-Tadd methods should be employed for the fundamental work of Freehand Drawing, Designing, Modelling and Carving, to be followed by—or run concurrently with—sloyd (tool-work) in the Public Schools; the Hampton concrete methods being utilized as largely as possible, especially in teaching such subjects as Arithmetic and Physics.

Sloyd, as at present operated in Ontario, lacks the foundational training of the faculties, which would be secured by the Leland-Tadd methods. The sloyd system would then be called upon to furnish tools only to those who had been prepared to use them with greatest advantage to themselves and credit to the system. At present much of the value of sloyd work is lost.

The plan above outlined would thoroughly prepare Public and High School students for laboratory and technical work, for the School of Practical Science, and the various schools of engineering, mining and other industrial sciences, in addition to giving them a fundamental training that is invaluable.

My thanks are due to the Hon. R. Harcourt, Minister of Education, for many tokens of his personal interest in the preparation and publication of this pamphlet, which has been compiled in compliance with his official orders.

I may be permitted to add that I shall be happy to be of any possible service to teachers, inspectors and others who are interested in the introduction of any of the methods herein detailed.

City Hall, Toronto. THOS. BENGOUGH.

NOTE. The printer's proofs of this pamphlet have been revised by me at Saranac Lake, N.Y., where, since August 1st, I have been attending Prof. Tadd's Adirondack Summer School, in order personally to test his methods. In my fiftieth year, and without previous training in Drawing, I have taken my place in the classes with young people who have been studying and using these methods, some of them for six months, some for as many years; and my progress has satisfied me of the peculiar value of these new methods in education. I shall take home several specimens of Drawing, Modeling and Carving which abundantly prove the truth of the statements made in this pamphlet. I began yesterday, and finished to-day (August 21st), a clay model of a legendary design (a frog sitting on a tortoise—the frog's mouth forming a match-safe). This model is of great historic interest, for the original was made by Mr. Chas. G. Leland when he was sixty years of age, and without previous knowledge of the process, except from observation. It is no wonder that children take kindly to these methods!—T. B.

Courtesy of Public School Board, Philadelphia

Interior View of the Public School of Industrial Art, Philadelphia, Pa. (Park Avenue, near Master Street.)

"Learning How to Do"

At Philadelphia.

THE GENIUS AND GENESIS OF THE WORK.

THE origin of the Public School of Industrial Art in Philadelphia is most interestingly told by Mr. Charles G. Leland, A.M.,* the litterateur and art teacher. "It was in Cairo, and at Miss Whately's School," he writes, "that there came to me as by inspiration, the solution of a problem which I had been seeking for years. This was the possibility of training children of both sexes, while yet in school, to learn how to make a living, or at least to teach them to use their hands. That this was allied to developing quickness of perception, or cleverness in general, I also believed, several great writers long ago holding that this might be true.

"The first and most natural thought to a practical mind would be to teach 'trades'—shoe-making, carpentering, printing, and filing metal. But I found on inquiry that the practical men had tried all these in schools, and in vain. Such work required too much muscle and brain and time, and though they might succeed with sturdy boys, what were the weak ones to do?—and above all what could be done for the girls? ... ... In this school I saw children, almost babes, working vis a-vis with a frame between them, the most beautiful double embroidery 'out of their heads,' without patterns. Subsequently I saw this in the bazaars, where I also saw small boys with tools as rude as English tinkers making exquisite jewellery. I had before in Switzerland, Bavaria, the Tyrol, and in Italy found children quite as young carving wood with exquisite skill. I learned that it was the same as regarded papier maché in Persia, pottery in Spain, and soapstone and varnish work in India. Children could also set mosaics and inlay wood. In fact, I found that all the decorative arts, such as make a house beautiful, were all within the power of women and children and the weak—all those who in this life are generally mere idle dependents."

Mr. Leland conceived the idea that many of the 'minor arts', commonly practiced during the middle ages in producing the profuse ornaments in vogue at that period, which have in our day been either superceded by machine-made products or numbered among the 'lost arts,' might be successfully re-discovered, and through the medium of children

* Illustrated article in The Century Magazine for October 1882. Mr. Leland has written many books dealing with Art, Education and Philosophy. He received his degree of A.M. from Harvard University in recognition of his writings against Slavery. He is now a F.R.G.S.

Interior View of the Public School of Industrial Art, Philadelphia, Pa. (Park Avenue, near Master Street.)

popularized. He put his theories into practice in Philadelphia by gathering a class of children under his personal supervision. This experiment, which began in 1878 and continued four years, was looked on by some as only one of the vagaries of an enthusiastic wealthy amateur, but he so far succeeded as to get his school adopted as part of the Public School system of his native city (Philadelphia).

"All pupils are obliged to draw their own patterns here," he writes. "Those who draw in light freehand, or what may be called Callirhoe, or 'fair flowing' style, learn to draw accurately in half the time which was required by the old method. It is said that in mountain passes the fastest mules are the surest footed, and those who draw most rapidly are the most exact. The development of simple outline from spirals and waves into lines of construction, and so on, modelling Moorish or Renaissance Arabesques, form the first step, and from the beginning the pupil, having the finial given, or selecting one, develops all the design without aid..... It is not unusual for the pupils to manifest a perfect ability to design, even before they can draw lines respectably.

"As the boys grow older they can be advanced, step by step, to technology or the most practical mechanical pursuits. Even if a boy has only carved panels or modelled in clay, he does not find himself like a cat in a strange garret when taken into any kind of a workshop to learn a trade.

"I observe that there is a great impression among the educational reformers in England as to education in cookery, art, farming. There is one clear principle in all practical or manual education—that is, that design, or a system, underlies it all, and that this should be carried out by teaching children in simple form the theory of any calling or occupation or art. By design I make children think of and comprehend many arts. By a little easy teaching you can make them think of agriculture, or housekeeping, or business, as a whole, and thereby simplify the practice.

"If you will reflect you will see that to design it to do something original—to think—to lift your mind above mere copying to creation. It is an awakening of the will, and a beginning of thought. I have observed that in children the creating, the consciousness of being able to make correct original designs, acted on the whole character. They became generally more intelligent. The School Board ascertained, by careful enquiry, that the pupils who attended the Art School stood higher in all studies than those who did not. It may be said that such development of the power to design according to the law of organic development is like making genius by rule. This is perfectly true, and it is also quite as true that the greatest genius is the one who makes the most of rules, or of the laws of nature, to produce from them new combinations and results.

"From the poor man to the peer, work is rapidly becoming essential to a good character and to human example of every type and station. . . . . Nothing tends so much to make work popular and dignified as the schools of art, science, and technical industry, which are rapidly extending their influences to every child in the community. This factor in education; this familiarizing every child with the elements of some practical kind of work; this blending of the useful and agreeable, is destined eventually to do more good than has been effected by all the inventions of the age, vast though their scope of usefulness may be . . . . . Training in science and art actually enlarges the mind, quickens the intellect, and makes a young man fitter to fill any station. This is generally accepted as a commonplace truism—not one person in a thousand ever realizes its tremendous truth.

"It was the old theory that every child has by nature just so much intelligence, just such a quantum of intellect, which might be cultivated, but not enlarged. If a boy had a so-called gift for art he should study it—not otherwise. The more advanced and practical thinkers of the present day have far more hopeful and encouraging views. They believe that science is capable of developing, I may say creating, intellect. There is in fact not one child in thousands who has any innate gift for art, but among thousands I never found one who could not become in some way a clever artist. It is easier to learn to draw well than to write well. There was never yet in this world a career worth having which could not be aided by familiarity with art and science.

"When every one, rich or poor, shall know what design is, though it be only simply decorative, and has become familiar with a tastefully ornamented house, however humble, then Art in its highest, purest and noblest sense will have no mystery for any one. It is most unfortunately true that, while taste, learning and culture are spreading rapidly, there has been so far no rational or common-sensible effort to really teach the poor and ignorant anything of the kind. There is a great deal of writing about the ennobling tendencies of Art, but there have been as yet very few efforts to really go down to the basis and make a proper beginning. The dilettanti and cognoscenti, and of late years the esthetes, have all preached in their time and way the glory of Raphael or Michael Angelo, and how desirable it would be to bring a knowledge of them down to the people. But they have never tried bringing the people up to Raphael. Now, Raphael and Michael Angelo sprung from the people in an age when every object was made with decorative art. And when this shall be the case with us, we shall have Raphaels again, and not till then There never was a real art in the world that did not spring from the people, that was not fully

shared in by the people, and that did not belong to the people. If there were to-day as much knowledge of and fondness for design as there seems to have been among the prehistoric savages of Europe, we should in a few years raise our manufactures of every kind to pre-eminence, and with them improve ourselves personally, morally and socially."*

INDUSTRIAL ART WORK.

This is the end and essence of the teaching of Mr Leland as incorporated and illustrated in the "Public School of Industrial Art," Philadelphia, through which have passed 15,000 children of the Public Schools of Philadelphia, and 2,000 teachers. Mr. Leland believes the school-house should be the art-centre. He says:

"There is a great coming revival of culture and of art, but it will not be with us until we teach its principles to every child in every school. There is an instinct in mankind for decoration, for color, for manifestations of what is beautiful. It has been starved out temporarily by the practical developments of science or by the useful. . . . Hitherto all elementary drawing has been misdirected either in copying shaded pictures, or, what is little better, in stiff and formal 'systems' When all can design and all know something about decorative art, the mystery will depart and the world feel less awed before old masters and modern gothic churches; neither will it believe that a pile of building is necessarily beautiful because it cost fifteen million dollars."

The capacity of children for art work is unbounded, a much larger proportion of all the elegant works of India, Persia, Egypt, or indeed of the whole East, being made by mere children than we of the West would imagine. It has been definitely ascertained that very little children in the Kindergarten organized on the plan of Froebel are capable of developing much more artistic ability than has been supposed; and this far from straining the mind, strengthens it. If a child can learn to sew, read, sing, draw, and model in the Kindergarter, it can surely pursue higher branches, both literary and manual, in higher schools.

Industrial art in schools covers the ground or fills the time intervening between the Kindergarten and the industrial school, but it blends with and includes the latter. The child who cannot as yet make a shoe or file metals or master a trade can learn to design decorative outline patterns, mould beautiful pottery, set mosaics, work sheet leather, and repousse† sheet brass. He or she can cut and apply stencils, model papier machié (a mixture of composition and paper pulp), inlay in wood, and make a great variety of elegant objects.

* "Industrial Art in Schools," Circ. of Information, U.S. Bureau of Education, No. 4, 1882 (now out of print).

† Repousse is a word used to indicate embossed designs in metal which are hammered out, or "pushed out," from the inside.—*Goodyear's "History of Art."*

From "New Methods in Education"

A Collection of Pupil's Work, Modeling Room, Public School of Industrial Art, Philadelphia

All the forms have been made by grammar school pupils. About eight hundred rotate into this room each term. All finished work is kept by pupils. The animal forms are modeled from casts. The casts are kept on high shelves around the room.

Mr. Leland introduced first the ornamental, from which the practical is an outgrowth. His argument was that as the flower precedes the fruit, so decorative art is developed in a race before it attains proficiency in the practical. In the rudest prehistoric times, in the earli st stone age, men and women made ornaments, though they were only strings of the commonest shells or beads of dried clay. Before the mammoth or cave bear had disappeared, primeval men etched their likenesses on their own bones with great skill and taste. Before men had good axes or knives, plows or saws, they made jewelry and embroidery far superior in many respects to anything now produced anywhere. The artist does not live to-day who could design anything so elegant and original as the shield described by Homer!

Upon the above and such like facts, Mr. Leland based his system of teaching industrial art, which, briefly stated, is "the learning how to design the patterns, and then working them out in any material, such as wood, clay, brass, leather, embroidery stuffs, or stencils." The system as Mr. Leland conceived it, "is capable of being introduced into every public or private school in the country, or into any institution where there is a preceptor who has some knowledge of drawing, with sense enough to apply it according to certain elementary hand-books of Art."* [The number of materials has, since Mr. Leland's time, been reduced to simply clay and wood.]

The educational value of industrial art work is beyond question. In the first place, by satisfying the innate faculty for constructiveness it conduces to quiet habits and content. Mr. Leland notes the striking difference between the infinite patience developed in the children of the east by the practice of the minor arts, and the unrest of American children who do not practice these arts. Moreover, while the minor arts, guided by a slight knowledge of decorative design, are so easy as to be regarded by all children as a recreation, they are at the same time of practical value in training the eye and the hand, and awakening quickness of perception. There came under his observation a great number of instances in which children who had been regarded as dull in everything showed great aptness and ingenuity in designing, modeling and carving—a proof that sluggish minds may be made active, even by merely mechanical means. It is not a matter of theory, but of fact and observation, that all children who practice decorative arts are thereby improved both mentally and morally; indeed, one of the earliest tests of the system in Philadelphia was with the feeble-minded, and it proved remarkably successful. It necessarily follows that when skill is once awakened in children, there comes with it far greater cleverness in those studies or pursuits in which the pupil was previously slow.

* Mr. Mackenzie Wright, 95 Ann street, Toronto, is the Canadian agent for these and other works referred to in this Report, as well as for the publications of Prof. Tadd, Mr. Leland's first assistant and successor.

The whole secret of learning to draw—which is the first step in industrial art—consists of making an easy beginning in the simple rudiments and in resolutely persevering. There is no "gift" or "talent" necessary. "A lady once declared to me," says Mr. Leland, "that there would be no use of attempting to teach her to draw, that she had tried and failed. 'And what did you try to draw?' I enquired. 'I tried to draw a *horse*,' was the reply. Her next remark was that she supposed that 'a horse or a man' constituted as simple a figure as could be imagined! When educated people are so ignorant," adds Mr. Leland, "it is not strange that the art of drawing even simple patterns is supposed to require a 'gift.'"

From "New Methods in Education."

Freehand Manual and Memory Drawing

The method of drawing on which this system of industrial art is based may be found in the following pages and from the illustrations. It differs from all other methods in several important respects, among them the following:—

(1) *Drawing must be Original.* No person not familiar with the practice can have any idea of the extraordinary rapidity with which children learn to draw and design when they are confined to simple outline patterns for decorative work under the stimulus of invention. It is because there is no "shading" or "effects" or "picturesque" mingled with their drawing to bother their brains that

they advance so quickly. As soon as they have a few lines and units of design by heart, they begin to design and combine boldly. If a boy or girl can once draw lines decently, there is no occasion to copy anything. As a rule, with very rare exceptions, the child from twelve to fourteen years of age can be taught in a few weeks, at the utmost a few months, to design beautiful original patterns – patterns worth executing in art, or patterns worth money. Nineteen-twentieths of all the most expensive carpets and wall-papers sold, Mr. Leland asserts, are inferior in design to what nineteen children out of twenty could produce in a few months if properly trained!

(2) *Drawing must be Freehand.* No rulers, compasses, calipers or squares are allowed; and the endeavor must be to secure such a command of the hand that a line can be boldly drawn, for there must be no re-drawing, no stumping, rubbing or scratching, no sketching in breaks. After a little practice in "throwing off" freehand spirals or curves, and in examining a few examples of the decorative art of different ages, even young children begin to design with taste and skill; and when they once begin their progress is rapid. There is no picture making, no shading. It is much easier to learn to draw well than to write well, and there is no child that would not do both admirably if it were obliged from the first hour to use freehand; that is to say, to control the pen or pencil from the shoulder, allowing the arm to rest on the table just enough to prevent fatigue. The whole difficulty of drawing lies not, as it popularly and very ignorantly supposed, in composing and inventing figures, but in drawing simple lines. If a child acquire true freehand in writing, it can not only draw well, but do almost anything well which requires perfect control of the hand. There are very few teachers who fully realize this, few parents who ever think of it; yet it is the mainspring of all manual art. For the sake of this it would be worth while to make industrial art a part of the education of all children, the younger the better. Therefore, all who propose to teach or learn art in any form should seriously consider freehand as the true key to all its practice. It is a great stimulus to quickness of perception.

(3) *Drawing Must be Large.* The first designs should all be large. Anything like literal imitation of small leaves and petty flowers should be avoided. As a rule, nothing should be drawn which cannot be perceived by the naked eye at a distance of fifteen feet. "Petty" work is generally worthless; yet it is a rule, almost without exception, that children in original design instinctively make petty figures. The chief reason for this is because they rest all the weight of their body on the hand while drawing. In this position there is not more than an inch of sweep for the point of the pencil, and the whole arm must be moved to enlarge this compass. Resting on the

wrist gives a sweep of perhaps two or three inches, though not to all. When the arm hardly touches the table the wrist sweep is again doubled. But those who draw freehand from the shoulder can with confidence cover a space of three feet diameter. Turner, the great painter, could do this, as he always painted without a maul-stick; and every child can learn to do it. It not only gives greater freedom of execution, but much more accuracy. Now, it is always easy for any one who can draw "large" to come down to petty patterns, but it is impossible for the petty worker to rise to great execution. It is therefore a mistake even in the kindergarten to give children petty patterns.

(4) *Drawing is in Black and White.* With pencil or ink on white paper, or with white chalk on blackboard. Coloring comes later.

The extreme degree of freehand sweep and the bold dash which result from making branching curves, give a character to this system of drawing which is not found in any other with which I am acquainted. As the pupil is step by step familiarized with a great variety of curves and ornaments, he finds that to combine and vary them becomes easier and easier. When the capacity for original, bold design is acquired, every art is acquired for those who want it, for design is the key to all arts. Either technological or artistic drawing may then be learned in half the time usually demanded for their mastery. It is established that in nine trades out of ten a knowledge of design is of use, and in about eight of these it generally leads to foremanship.

When the pupil can make a good design and is desirous of advancing to simple decorative painting he is taught to fill in the ground with India ink or any flat color, and from this he proceeds to varied monochrome or to large illumination. Mr. Leland believes, with the great artist Turner, that it is through monochrome, or single colors alone, that a true colorist can be made. He says, "If we take two children and teach one to draw and shade together in the old style, and then to 'paint flowers' or to mix colors from the first, while we train the other through freehand, outline, and monochrome to blending, it will be found that the latter will at the end of the year be far in advance of the former in every respect. I have tested both methods and found that the superiority of the single method is incredible."

The pupil, with such a training as the above outline indicates, can easily and pleasantly master any of the fifty or one hundred "minor arts." It is a remarkable law of nature or of humanity that all the minor arts, or such branches of industry as are allied to ornament, are very easy, and can generally be so far mastered in a day by anybody who can draw as to enable the pupil to produce a perfectly encouraging result. A child who begins with easy work may be led to

hard work in half the time in which the latter can be learned by itself.

This rule constitutes the beginning and the end of the whole system of industrial art.

But industrial art, to be taught in schools, need not and should not be limited to ornamental work. This is to be at first practiced simply because it is *the only* work easy enough for children and girls. Carpenter's work or joinery, in its rudiments, or in fact any branch of practical industry, may be taken up as soon as the pupil is fitted for it.

Mr. Leland tested his method on sewing, embroidery and other needle work; and—contrary to the usually accepted opinion that the first thing all girls should learn is plain sewing—his experience fully shows that crewel work and outline embroidery are very much easier than plain sewing. Now, the girl who can invent and draw her pattern always "outlines" and "crewels" much better than the bungler who has to rely on begged or borrowed designs. Few would believe at what an early age little girls who try can make their patterns.

It is the same if the pupil prefers modeling in clay: the pupil who can design immediately shows his superiority in clay modeling, for nothing conduces to inventiveness so much as design; and after the mere rudiments of manipulation are mastered it is better that the pupils should work on a large scale in great variety of subjects than be kept to petty devices. It is the fault of all current systems of drawing that they limit the useful mind to *small* inventions. The boy or girl who can design is in a way learning to invent, to seek for original design, and what is learned in the lead pencil expands in the clay—for modeling is drawing in clay. What drawing-design is to modeling, such is modeling to all arts where form is to be inspired with taste. Both can be learned by all children of almost any age.

The practical results of a combined knowledge of decorative design and modeling are that the pupil learns to use the eyes and fingers in a way which will render *any* work easier. The boy or girl who can draw and model even tolerably well can easily find a situation wherever casting or any other kind of plastic work is executed. There is a great demand for boys with such knowledge.

After dealing with the various "minor arts"—wood carving, stenciling, papier maché, sheet leather work, ceramic painting, repousse work, etc., Mr. Leland wisely says:

"No one can doubt that if every teacher in America could practice one or more strictly industrial decorative arts of a more practical nature than are now taught in schools, there would be an immense impetus given to our national culture and industry. There was very little really *solid* in old-fashioned drawing, water color, the [illegible]s, wax flowers, and china flower plaques; but there is a great deal of real value in free-hand design, and in executing it in wood, metal, leather

From "New Methods in Education."

Partial View of Wood Carving School, Public School of Industrial Art, Philadelphia

The pupils, whether of the grammar grades or teachers' classes, rotate into this room from their work in drawing, designing and modeling. [illegible] small room suffices for 500 pupils in rotation at different hours, 40 working at a time. This picture also emphasizes the simplicity and [illegible] of equipment.

and all other suitable substances. Not only does the teacher find in decorative art a means of making more money, but he is also provided with what to all is an agreeable change from other duties; for, while teaching, the instructor, in common with the pupils, can produce something saleable and valuable."

Mr. Leland argues for the beautifying of homes with art work done by members of the family on the principles laid down as above.

It is a curious reflection, he says, that even in the time of Elizabeth the "sitting room" of Anne Hathaway's cottage—the home of people who were then called poor—was far more beautiful than any drawing room in modern Philadelphia, for it was entirely lined with old carved oak. He gives this striking illustration of what might be done for an ordinary country house by a family who will devote their evenings to its improvement, with a few tools and cheap materials. In the first place, he says, good planed plank or boards can, by pattern, and measurements, be converted by most men or boys into solid and even elegant furniture which will cost less when finished than is usually paid for machine-made varnished and veneered rubbish. The floor of the cottage may be set in mosaic, at the expense of time, an iron bar, a hammer, and stone of different colors; or it may be inlaid in wood and covered with rag carpets in Etruscan or Greek pattern, all home made. The walls may be covered with stencilled designs, or ornamented with carved panels at intervals, or strips or panels of stamped leather in old Spanish patterns, touched with gold. The door may be hung with rag carpet portiers, or cheap materials, such as crash toweling, dye-painted and outlined with embroidery. The ceiling may be stencilled or adorned with papier maché mouldings.

There is another argument in favour of industrial art education. It is the enormous and rapidly growing demand for hand made objects. As education and culture progress, people begin to find out that in jewelry as in pictures, or even in fire-arms, a thing to be truly artistic must be hand made. It is not as yet generally understood, says Mr. Leland, that machinery, though it may manufacture pretty things, cannot make anything *artistic*. There are no such things as artistic works made in any way except by hand. Only the vulgar and ignorant confuse or confound that which is beautiful with what is artistic. The merchant is guilty of an illiterate blunder who advertises as "artistic" goods turned out by the million, from moulds. Art does not consist entirely in prettiness; its best characteristic is the impression of individual character, which disappears in the machine—in fact, the more perfect the machine work, the less it is artistic. A Soudan bracelet made with a stone and a nail is far more artistic than a Connecticut mill-manufactured dollar bangle: yet the latter is infinitely the more "finished" of the two. The demand for hand made art will

ere long give employment to that very large class whom it is at present difficult to fit to anything. The day is not distant when the public will be so well educated as to distinguish clearly between hand-made and machinery made in everything pertaining to ornament. When that times comes we shall be a nation not only of artists, but of mutual purchasers of art work. As an illustration of the pleasing fact that the demand for art work in Canada is on the increase I may mention that within one week I knew of three distinct calls for original designs—from a hatter, a wall paper dealer and a maker of plaster casts.

"The most serious obstacle with which industrial art has to contend," says Mr. Leland, "is the extravagant and inflated ideas which are popularly attached to the word *Art*, which is usually applied to pictures and statues—as to which not one person in a score can accurately distinguish between good and bad—and also because the kind of Art knowledge which is current sets itself forth in a vast vocabulary of cant—men who profess to be authorities declaring that "Art" is something for only the very few to rightly understand, and that it requires special instruction and much education. It is not remarkable under these circumstances that "Art" has become a terror!

It has been proven by years of test with thousands of children that art industry can be taught without infringing on other branches of education; that children when at school can learn to design and model so well in a few months with one weekly lesson as to readily obtain a place as under-designers in factories; that they can easily produce wares which will sell, and that at the same time they can acquire more culture and intelligence and power of observation than pupils who do not take this art work.

People are beginning to think there must be some shorter and more practical cut to drawing than the old road, with its blocks, perspective, diagrams, and geometry ever indicated. There is a growing belief that all study must be made easier. There may be no "royal road" to mathematics, but that is no reason why the way to everything should be over corduroy planks and break-neck rocks. There must be work to win Art or learning, but work need not be offensive.

Industrial Art work conduces to culture, for the minor arts are as much associated as the line arts with all that pertains to the very cream of culture. To know them at all is to know in time the names and works of all the great men whose names and works cast the highest splendor on splendid ages. No boy or girl learns to design, model, carve, inlay and embroider without in time reading with keenest interest Owen Jones, Labarthe, Fergusson, Whewell and Dresser, with many more such writers. With such practical knowledge and reading every object of taste and almost every book reveals beauties and

awakens associations such as the many envy and the few possess, fo the one who has worked in industrial art understands and feel decoration and beauty as no mere reader can.

In addition to the argument that by making hand work a par of every child's education we shall destroy the vulgar prejudice against work as being itself vulgar, there is the final argument which cannot be resisted—that there is a tremendous demand among the manufacturers of Europe and America for decorative artists and artizans. It was thought in England that the great art schools of South Kensington and Manchester and such places would afford a supply, but it has been a drop in the bucket. The industrial schools have been as inadequate. For it is not only a supply of artistic goods that is needed, but also a taste for them—a manufactory and a market as well as a greater demand; and to meet this double want there must be extensive radical art education among the people. The highest statesmen in Europe know this; and the saying of the Prince of Wales (now King Edward the VII) cited in an article in the *Nineteenth Century*, that "learning and earning should go together," indicates the solution of a great problem by a brief rhyme.

THE PUBLIC SCHOOL OF INDUSTRIAL ART.

Mr. J. Liberty Tadd* was Mr. Leland's first assistant in the work of the private school which the latter established and carried on in Philadelphia at his own cost, the pupils being selected from the public schools of that city. The attention of the Public School authorities having been drawn to this educational development by the strikingly original and artistic work produced by the young children, it was arranged that the Philadelphia School Board should take over Mr. Leland's school, and from that time (1880) till the present the work has been a part of the Public School System of Philadelphia with the above title, Mr. Tadd having been placed in charge when Mr. Leland returned to Europe. An entire school building containing eighteen rooms, situated on Park Avenue near Master Street, is now utilized for this work. Prof. Tadd has systematized the curriculum, reduced the number of materials used in the work, and correlated Nature study with Art in a most interesting and helpful way.

There are enrolled in the Public School of Industrial Art over 1,200 children, who are selected from the various public schools of Philadelphia by a system which gives parents a considerable share in the selection.† The daily school session is from two to four o'clock on the afternoons of school days, the pupils rotating so that each daily contingent consists of about 200 pupils, who attend one afternoon each per week, carrying along their regular school studies in addition. The

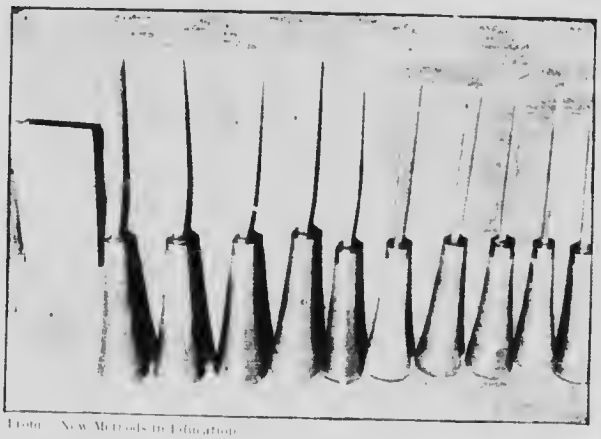
*For brief biography of Mr. Tadd, see last pages.

†The Regulations, as well as the last Annual Report of the School, will be found at the end of this Report.

present staff consists of nine teachers, and the annual appropriation from the Public School Board is about $8,000.

The departments of instruction include Drawing (with Nature Study), Designing, Clay Modeling and Wood Carving—all pupils being required to take all the subjects. It is one of Prof. Tadd's convictions that these four branches of work should be carried on concurrently. Mr. Tadd's argument for this course is that these are simply various methods of thought-expression, and that the more numerous the channels into which thought can be run and moulded and formed the more thorough is the grasp of the thought. The difference in the material used is also significant; for the expression of a thought in plastic clay and afterwards in a hard resisting substance like solid oak, brings into play and into training, and hence develops, new tactile muscles, and nerves which are not involved in the simple process of drawing or designing, and thus unconsciously develops will-power. These four branches therefore hold to each other the intimate relation of sequence as to the development not only of thought but of manual dexterity.*

Mr. Tadd says that he has found pupils who upon entering gave evidence of weak wills and muscles, whose chins dropped and whose expression was vacant, but who in a month or two after tackling wood-carving would develop firmness of muscle and of facial expression, their whole countenance being changed by the mental as well as the manual effort called for in the process of wood-carving.



From "New Methods in Education"

Set of Carving Tools

Including small sharpening stone. With this simple and inexpensive set of tools all ordinary carving can be done

The development of the work in the Industrial Art School proceeds strictly upon the four lines above mentioned. There are no "tools" employed except the mallet and about a dozen chisels required for wood-carving. There are no planes and saws and hammers and vices, such as are used in ordinary manual training schools and in

* Prof. Tadd has given the results of nearly a quarter century's experience in a sumptuously-printed volume of over 200 pages, entitled, "New Methods in Education," which is beautifully illustrated with photo-engravings of actual work.

"Sloyd." Even in carving Mr. Tadd will not allow the use of any wood softer than oak, which is notoriously tough, arguing that soft and pliable wood is poor material for which to develop muscle and brain.

Nature study is correlated to art work by using birds, fishes, shells, ores, etc. as models for drawing, and also conventionalizing these forms in original designing.

Mr. Tadd develops color work in connection with design only after the pupil has obtained freedom in the use of the hand and in the expression of his thought; and in connection with color work he introduces nature study by allowing pupils to copy actual butterflies and other colored insects and birds, etc.

After a thorough drilling in the above branches and by the methods referred to, Mr. Tadd introduces drawings of mechanical, architectural and scientific apparatus, and in this branch the greatest possible accuracy is required, yet without compasses, calipers, "T" squares, try-squares, and the various "tools of precision"—the only instrument allowed being a straight-edge. Mr. Tadd believes with Aristotle, that "the hand is the instrument of instruments and the eye is the form of forms."

From the above brief outline it will be seen that the School of Industrial Art is working on entirely different lines from other art schools, manual training systems, "Sloyd," etc. These methods are at poles asunder from the methods employed in the School of Industrial Art. To put the matter into concrete form Mr. Tadd says to his pupil, "Take a pencil and a piece of paper and draw something freehand, it matters not what, so long as it is something that you like and with which you are familiar—a rabbit, a cat, a box, or whatever you please. Then repeat that object several times or draw others of different kinds; but keep on drawing until your hand becomes obedient to your will. Practise also making circles on the blackboard, first by left-hand motion, next by right-hand motion, or reverse, then with both hands moving in the same direction, then with both hands in opposite directions; then with one hand in one direction, and the other in the opposite direction; then make loops and simple outlines of various other kinds till your hand becomes thoroughly accustomed to respond to your will, and your eye is trained to denote the accuracy of a line, and your whole system becomes so accustomed to the above process that you can perform any of these functions automatically. After that I will give you exercises which require absolute precision. But do not attempt precision now; freedom is the great thing—absolute accuracy can be left to take care of itself." In other words, Mr. Tadd speaks to his pupils as Prof. Haupt, the celebrated teacher of "German in Five Weeks" said to his:—"The great thing first is to learn the German language; after

you have become so familiar with it that you think in German and can read and write in German, you may learn to read and write German with accuracy, and with the greatest regard for grammar."

The teachers of "Sloyd" start at the other extreme from Prof. Tadd, and they practically say to their pupils, "The great thing in life is accuracy; and we furnish you with instruments that will ensure accuracy even down to millimeters. Our function is to teach you how to use these instruments and how to develop skill and accuracy so that you will be able to make articles in the most precise and correct fashion. We furnish you with a kit of tools so that every piece of lumber which passes through your hands may be planed and sawed and cut and trimmed in the most precise, accurate, and thorough manner. We do not give you freehand drawing, because that is not accurate. We do not give you clay-modeling because we do not consider that manual training. Neither do we encourage carving, for that is not manual training. At a later stage, however, and outside of class, you may do carving if you wish; but we do not recognize it as part of our work."

I think the above is a fair statement of both sides of this subject, and I put it in this form so as to show the antithesis, and to illustrate more strikingly the difference between the system now in vogue in Ontario (Sloyd) and the system employed in the School of Industrial Art in Philadelphia.

BASIS OF THE METHODS.

Mr. Tadd's methods for elementary work in education consist:—

(1) In a practical development of the factors of the organism itself—the hand, the eye and the brain—by the acquisition of their conscious control, to be followed by automatic control.

(2) In the use at certain periods of powerful rectifying exercises to reform or correct awkward muscular movements or habits, as well as for the purpose of gaining facility, balance, proportion, accuracy, magnitudes, fitness and grace.

(3) Exercise in different mediums, as wood and clay, for acquiring dexterity and skill in shaping various ideas.

(4) Exercises for acquiring accurate and permanent organic memories of environment: (*a*) from nature, at periods when impressions are most vivid (*i.e.* nascent); from animals, flowers, insects, shells, etc.; (*b*) from art works and ornaments of best periods; (*c*) creative designing in various materials.

Mr. Tadd considers esthetics,—the science of the beautiful in nature and art, especially that which treats of the expression and embodiment of beauty in art—as one of the important things in education. The young, of whatever circumstance in life, have a right to the joy that comes from knowing and perceiving beauty in nature and in

art forms. In the young should be planted the power of enabling them to perceive in their environments "the good, the true and the beautiful," while at the same time the capacity to make a living should be imparted. It is a mistake to teach a trade only, or to fit for business only, without developing the capacities to appreciate beauty and art. He has no sympathy with manual training methods that make the use of tools and workshop exercises the main end, for the pupils thus become simply machines, thoughtless mechanisms.

The first tools to be used and trained are the mind, the eyes and the hands,—the instrumentalities of the organism. To these our chief care should be given. It is of little use that the pupil has built a machine or performed a piece of work by mechanical movements, if his own organism is not complete, if his hand is not sure, his eye not true, and his mind not balanced.

After testing many pupils from divers institutions, Mr. Tadd found almost invariably that they were powerless without instruments of precision—rulers, compasses, gauges, calipers, etc. Hence all these adventitious aids have been abandoned, and by developing the human organism itself Mr. Tadd makes his students realize the immeasurable life possibilities and potentialities planted in each individual. He follows Michael Angelo's dictum, "We must carry our instruments of precision in the eye, not in the hand." Only after striving and struggling up above the use of instruments of precision do we recognize their futility in developing the mind, the judgment, the eye and the hand. The mechanical methods have to give way, one after the other, after trial in various directions.

Mr. Tadd has gone through all the experiences of manual training by the old methods, which he condemns, but which were not abandoned until after fair trial and test he had proven their fallacy. Three or four years of carpenter work did not develop the eye and the hand, except in the limited operations of that trade, and proved futile in developing the mind and the judgment. The operations being mostly mechanical, and being performed by instruments of precision, every time a board was cut it would be marked off: every time a piece of wood was cut it would be guaged; the caliper, the T square and the ruler were constantly used. Mr. Tadd argues that if such mechanical working in wood has power to develop skill, accuracy, and deftness—in short, to educate the powers of the mind—carpenters who have worked for years at their trade should be one of the best educated classes in the community; but test them by taking from them their compasses and squares and measuring instruments, and immediately they are all "thumbs".

Mr. Tadd made a thorough test not only of carpenter work, but feeble art methods, trade training, abuse of geometric forms and

blocks, false, artificial and unnatural systems devised for money-making purposes, were tried and proved wanting. A number of trade processes were tested with similar results, until he actually, by experience, came down to fundamental facts, and on these he has built up a method reasonable, feasible and without great cost, adapted to all grades, from child to adult: a plan that can be applied without friction to every kind of educational institution, and limited only by the capacity of the individual; a method covered by natural law, working with the absolute precision of nature itself; a process that unfolds the capacities of children as unfold the leaves and flowers; a system that teaches the pupils that they are in the plan and part of life, and enables them to work out their own salvation on the true lines of design and work as illustrated in every natural thing. Much time and energy are saved to pupils working this way: their understanding of things being quickened, they have less drudgery to go through to obtain facility. The work is chiefly and above everything else to be desired for its disciplinary value as an educational method, apart from its practical value, in that it cultivates judgment, proportion, symmetry, and fitness.

Hygienically, the method is valuable, for in drawing on blackboard, the children take exercise. The work is done on so large a scale that they have to move about—no small work being allowed. The children avoid the habit of peering at lines, thus shortening their focal length, which is one great trouble in the drawing, reading or writing as usually followed in the schools. In many instances much damage is done to sight. Too many children wear spectacles in these days.

The most radical features of Mr. Tadd's method are: (1) Ambidextrous drawing; (2) Memory drawing; (3) Rotation of the branches of work.

I.—AMBIDEXTROUS DRAWING.

Ambidextrous work is taught mainly for its physiological and educational value; for the physical co-ordinations acquired. Biology teaches that the more the senses are co-ordinated to work in harmony in the individual, the better. Work with the right hand employs the left lobe of the brain; while work with the left hand employs the right lobe of the brain. In every conscious movement made, the student exercises some special region or center of the brain, and in every change of movement he brings into play some other center. Mr. Tadd argues thus: If, by performing any such action with energy and precision, I aid in the development of the accordant center, I am improving the cere[illegible]rganism, building for myself a better and more symmetrical [illegible] fabric. W[illegible]se both feet, both eyes, both

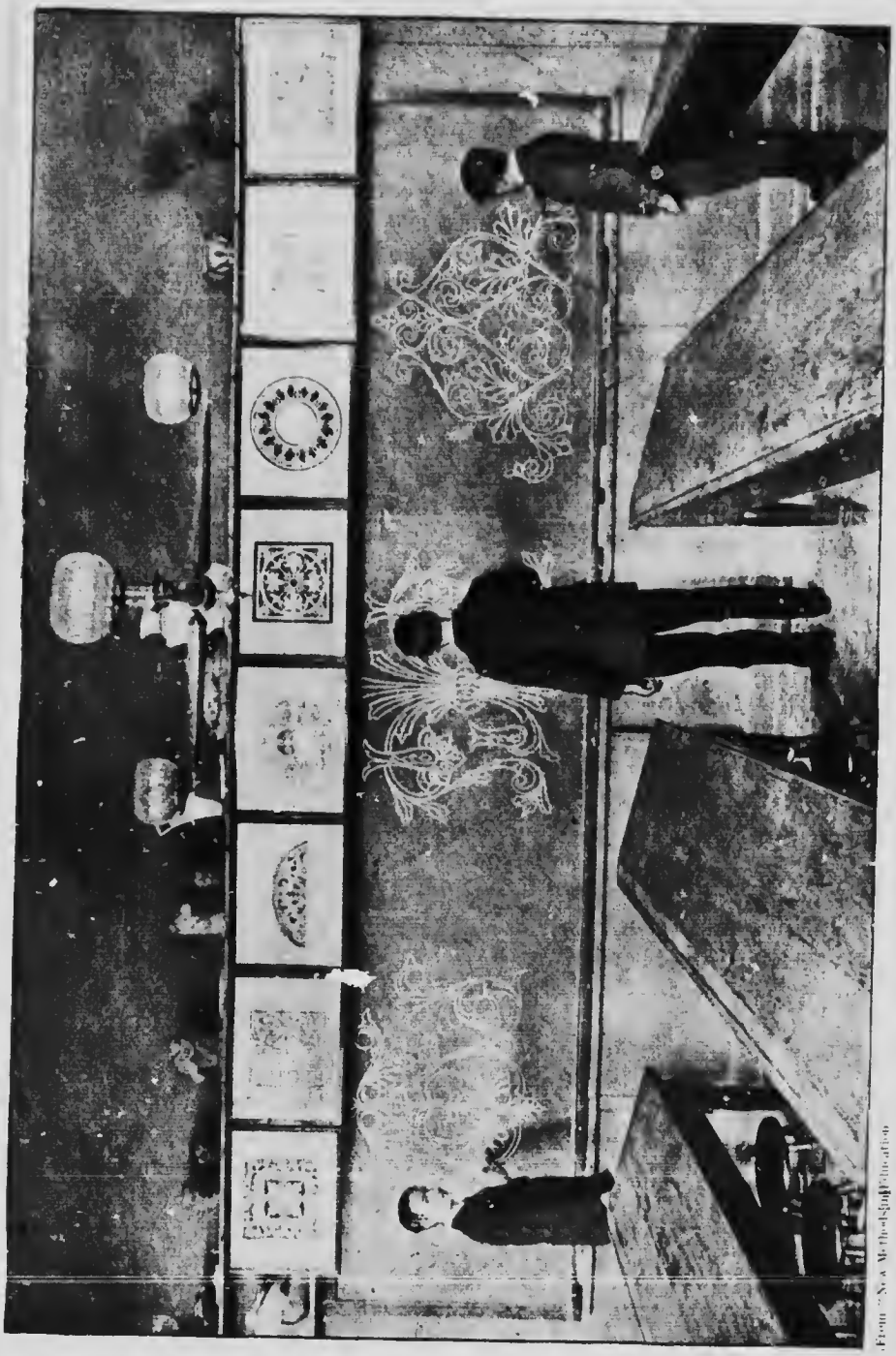
ears; and therefore, the better and firmer the union of each hand with its proper hemisphere of the brain, and the more facility we have of working each together, and also independently, the better the brain and mind and the better the thought, reason, and imagination will be. The results of the method have fully demonstrated this fact, as the teachings of modern science and especially of psychology have fully established the truth of this contention. In exercises that make a firm, well knit union between the hand and the brain, making the hand (and each hand) obey the mind independently, we are producing new mental conditions, or physical structure in the brain. The brain has growth in the beginning for a certain period, and arrives at a certain size during youth; afterwards it increases in complexity and structure. All recent studies of the cerebrum point to the fact that our intelligence is associated with a union of brain cells one with another; and the more experience we gain through the various senses, the greater will be the structural union and complexity of the brain cells. Prof Tadd claims better results from the right hand when the left is worked also, than from the right hand working alone in the same space of time, in almost any kind of hand work. In 240 trades or crafts the workman employs both hands quite freely, and in certain occupations, like carving, engraving, modeling and chasing, the left hand works as much as the right. Muscular co-ordinations and facility with the left hand as well as the right are therefore very important and of large practical application, apart from the physiological and mental value of ambidexterity. Indeed, the Old education neglected both hands, not the right hand only. Surely, then, the New education must not make the mistake of training, but one hand—one only of these two instruments of power and action.

The great artist, Meissonier, said, "It would be a great advantage to be ambidextrous; children ought to be taught this habit."

Prof. Tadd's arguments for ambidexterous training are strongly reinforced by those of the late Dr. Daniel Wilson,* President of Toronto University, himself, a "lefthander." He wrote in 1871:—

"The dexterity occasionally manifested by left-handed performers is sometimes regarded with surprise, as though it were accomplished under unusual disadvantages. But such skill as that of the left-handed slingers of the tribe of Benjamin is in no way exceptional (mighty men "who were armed with bows, and could use both the right hand and the left in hurling stones and shooting arrows out of a bow." 1 Chron. xii. 2). All truly left-handed, as well as all truly right-handed persons, are more likely to be *dextrous* than those who are unconscious of any strong impulse to the use of either hand. The bias, whether to the

*Canadian Journal, vols 13 and 15, two very elaborate articles reviewing all that had been written on "Righthandedness" and "Lefthandedness."



Ambidextrous Designing

These pupils are grammar school pupils. They have had two hours training per week for two years, in drawing, modelling and carving, in relation. Each time they make a design it is different, and they draw various styles of ornament, besides drawing from objects. Such work as is shown here will be given in about six months.

From "New Methods in Education"

right or the left, is the result of special organic aptitude. With the majority no well-defined bias betrays any unwonted power, and they merely follow in this, as in so much else, the practice of the greater number. But there is no such difference between the two hands as to justify the extent to which, with the great majority, one is allowed to become a passive and nearly useless member. The left hand ought to be educated from the first no less than the right, instead of leaving its training to be effected, imperfectly and with great effort, in later life, to meet some felt necessity. In certain arts and professions, both hands are necessarily called into play. The skilful surgeon finds an enormous advantage in being able to transfer his instrument from one hand to the other. The accoucheur is no less indebted in critical cases to the prompt command of the left hand. The dentist has to multiply instruments to make up for the lack of such acquired power. The turner, the cabinet-maker, the chaser and die-cutter, who have mastered the same ambidexterity, all experience thereby greater facility in executing some portions of their work. The boxer has to learn the free use of his left hand. The fencer who can transfer his weapon to it, places his adversary at great disadvantage. The lumberer finds the operations of his wood-craft facilitated by learning to chop timber right- and left-handed; and the carpenter may be frequently seen using the saw and hammer in either hand, and thereby not only resting his arm, but greatly facilitating his work. In all the fine arts the mastery of both hands is advantageous. The sculptor, the carver, the draftsman, the engraver, and cameo-cutter, each has recourse at times to the left hand for special manipulative dexterity; the pianist depends little less on the left hand than the right; and as for the organist, with the numerous pedals and stops of the modern grand organ, a quadrumanous musician would still find reason to envy the ampler scope which Briareus could command.

"The skill of lefthanded artists has been repeatedly noted. Foremost amongst such stands Leonardo da Vinci, skilled as a musician, painter, and mathematician, and accomplished in all the many sports of his age. Hans Holbein, Mozzo of Antwerp, Amico Aspertino, and Ludovico Cangiagio, were all left-handed: though the two latter are described as working equally well with both hands. In all the fine arts the mastery of both hands is advantageous; and accordingly the left-handed artist, with his congenital skill and his cultivated dexterity, has the advantage of his right-handed rival, instead of, as is frequently assumed, starting at a disadvantage. In summing up the whole, it appears that left-handedness is inherited and transmitted, though in an irregular manner and with varying intensity; that the range of the influence, to whatever source we may trace it, affects other organs of the same side only partially and uncertainly; but that, wherever left-handedness

is strongly developed, it is accompanied by more than average dexterity in the organ thus specialized. The full use of both hands, however, largely depends on education. The left hand is, with the majority of mankind, systematically reduced to the condition of a comparatively useless member of the body, alike contrary to reason, and without any justification either in the anatomy of the hand or in the requirements of the mind. Wherever the early and persistent cultivation of the full use of both hands has been accomplished, the result is greater efficiency without any counteracting awkwardness or defect.* The experience of every thoroughly left-handed person shows the possibility of training both hands to a capacity for responding to the mind with promptness and skill: yet at the same time it is none the less apparent that in cases of true left handedness there is an organic specialization which no enforced habit can fully supersede."

Curiously enough, there comes from the newest industry (the automobile) this conclusive paragraph, culled from the Automotor Journal, London, Eng., of Sept. 1901.

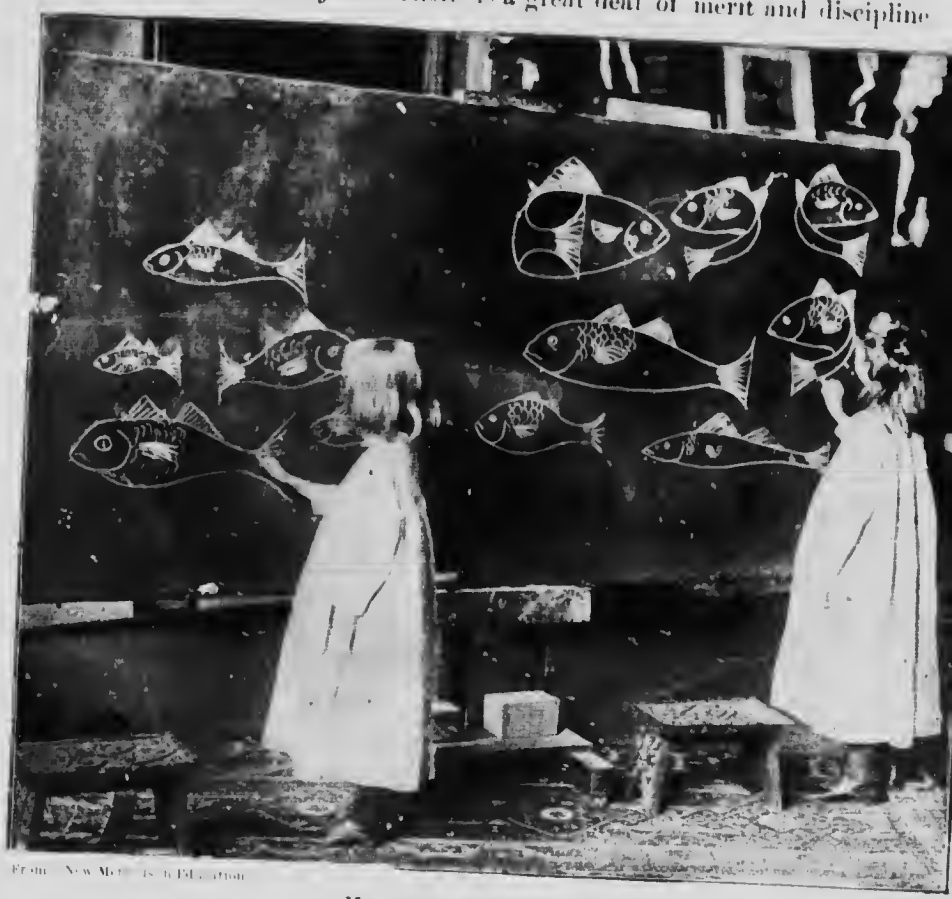
"ELEMENTARY EDUCATION. A series of lectures by J. Liberty Tadd have recently been delivered to the Society of Arts, which cannot fail to be of interest to almost all classes of the community. It is especially noteworthy that amongst the indispensable elements of elementary education, Mr. Tadd lays particular stress on the necessity of cultivating amongst children ambi-dexterity, that is to say, the cultivation of equal dexterity in both hands. Mr. Tadd points out that this is of importance in developing the two sides of the brain, and probably that is quite correct. But what is of importance to the automobilist is the additional facility which it gives in repairing or putting right complicated mechanism. Breakdowns will happen with the best of cars, and when one is on one's back underneath a vehicle it may make all the difference in the world in the manipulation of a refractory bolt or screw whether one can use one's left hand confidently or not. The psychological aspects of ambi dexterity we leave to the Society of Arts, but there is no question that its acquirement will be of very great assistance to the practical automobilist."

II.—MEMORY DRAWING.

Memory drawing of all forms and ideas, in Prof. Tadd's opinion is not insisted upon enough anywhere, though it is one of the most beneficial exercises for expanding the mind and giving the artistic ability so much to be desired educationally. All good artists sketch incessantly; it is beneficial even to recall forms and designs when there is no opportunity to put them down on paper. Not life forms only should be memorized, but the mind should be exercised in mentally designing, and making compositions or patterns. Very valuable and useful power can be gradually acquired in this way. We should be able to *think* compositions and designs, and mentally to change them from state to state, just as the character of our speech or the current of our ideas changes when we are thinking or reasoning. "I see no reason," says Mr. Tadd, "why the hand should not respond to any idea or thought as instantly as the tongue usually does. In education, I

* I have just learned from my brother, William, that an artist friend of his (one of the best in New York) became paralysed on the right side and thus lost the use of his working hand. It took him three years to learn to draw with his left hand, and he had thus good reason to regret having neglected ambi-dextrous training.

have found that working in this direction is perfectly practicable in all children; that the instrumentalities in all children and their powers and capacities seem as though they were specially endowed to this end. I really believe that all hands are capable, in the way of art work, of responding in an exceptional degree to some environment, or to some of the various conditions of nature. I find every day that it is more important to get the children to mentally recall form than it is to imitate it from the object. There is a great deal of merit and discipline



From "New Methods in Education"

Memory Drawing of Fish Forms

The children are practicing drawing various fish from memory, to make different sizes and proportions, and to make them turn in different positions. The child should get facility of expression with a few essential features, before much in the way of detail is required

in getting the children to endeavor to make tactual impressions on paper of even the complex things they cannot readily have before them, like a horse, for instance, that they have seen on the street. It is to get knowledge of form to come to the finger tips, instinctively on command, that we work.

"The trouble with many art schools is endless imitation of models and sketching from models, with very little memory work. I believe

if a quarter of the time spent in looking at models were given to recalling, without the model, the impression made by it, much more valuable results would be obtained. I have many children who know the names of the different parts of the fish, which they can express with ease by drawing. To get them to memorize the names of the first dorsal, the second dorsal, the pectoral fin, the ventral, anal and caudal fin and other difficult technical names without some means of systematically reproducing them, is a hardship, and one of the things from which the present school suffers. It is unreasonable to tax the mind, the verbal memory, with such things." Placed in the mind, however, by these instrumentalities (drawing and modeling) learning and even the practice of expressing abstract thoughts in symbols becomes a delight and a pleasure and is continued with ease. On the contrary, I have seen many classes of teachers and normal-school graduates who have listened to thousands of facts poured out in a stream, and who have filled scores of note-books with diagrams and notes yet who have failed to fix in the mind anything about their work. The many impressions have obliterated each other and only partial ideas result."

III.—ROTATION OF WORK.

Rotation of work plays an important part in Prof. Tadd's methods. The pupils do not take a course of drawing alone, or of modeling alone, to be followed with another course for a certain period, but in every grade from the lowest the children are required to work in the four departments of drawing, designing, clay-modelling, and wood carving. By drawing all forms first in paper, then in soft clay, and then in tough wood, all the possible physical co-ordinations are acquired in the different materials. The work of making forms in clay reinforces the drawings; carving on wood reinforces the modeling. Designing forms in clay and wood, as well as on paper, compels originality and invention, or the exercise of the creative capacity at every step of the work.

The method or system of rotation varies with the different schools In some the pupils change from one branch to the other at each lesson; in others at every fourth lesson; in others again, a piece of work in each branch is finished before the change is made. Rotation is very stimulating to the pupils, and especially shows for what they are best suited. The exercise of the opposite capacities gives them a chance to do work in the branches in which they show most deficiency. No exception is made with any pupil—all, in the elementary courses, must work in the various mediums, unless constitutionally defective.

Just as Prof. Tadd insists that elementary training for the young must precede all special work,—such as joinery, cabinet work, metal work, trade processes, or draughting, mechanical and architectural

drawing, object drawing, etc.,—so he insists that the hand must, by this rotation become familiar and experienced with form in these different mediums. All artists and artisans at once admit the reasonableness of this. To make the hand itself skilful is necessary before it can do its best with tools.

By these methods all pupils without exception develop their capacities. Some get remarkable power and enter the diverse grades of art work at once, in various directions. All, however, acquire sufficient skill to enter the different minor industries with credit. All, according to their degree of intelligence, are prepared to do skilled work with tools and hands in the different vocations open to them, after very little preliminary training, because they have skilled hands, true eyes and a certain amount of power of expression and originality.

NATURE STUDY.

Very hard-headed and practical is Mr. Tadd in dealing with the study of Nature—of which Dr. G. Stanley Hall speaks as "the foundation and source of all education, science, art and religion."

From "New Methods in Education"

Drawing from Nature

"The desire for nature study," says Mr. Tadd, "is constantly increasing, and is beginning to be appreciated among teachers. It is the *method* of studying nature that must now be improved. When we can learn, understand and make use of the lessons with which nature teems, the new education will indeed have made a great advance. This means much more than merely looking at things, though that is

better than merely reading about them. A recent catalogue of a summer school contained a picture of a professor of botany dissecting a plant while the class looks on. He was learning something and receiving an actual impression through the touch sense and the muscular sense as well as through the vision but the members of the class were getting only a slight visual and auditory impression of the plant (for I presume the professor spoke) that they would soon forget. Now if each of the class had dissected the plant and in addition to the visual and auditory impression had gone an impression through the muscular and touch sense, and then had reinforced these impressions by making diagrams of the various parts, attaching their respective names to each part first from the plant and then from memory, a more permanent impression would have been made. It is the performance of actions through a number of the modes of expression that calls forth powers of perception and conception and expresses and makes so vivid an impression on the brain as never to be forgotten."

Portion of Drawing

In dealing with the methods of drawing from Nature Mr Tadd says we should never expect scholars to render forms without first assimilating impressions from the real things, or from prints, pictures or drawings of some kind. They must be constantly sent to the source, to the thing itself, to receive fresh impressions. By degrees they will lose the desire to sit and imitate detail by detail, and this is a valuable quality we wish them to get—the power of being able to mentally photograph the object they look at, and then to revive it later; to be able to recall it with its original vividness of form, color, light and shade—its essential qualities. "That this can be done and well done by children I am convinced from the product that we get in our schools. If it is done systematically throughout all the years of school life I claim that we will have a product that will be much more valuable than any yet attained. As teachers, this is what we must aim for."

All the objects of nature are beautiful, created for our admiration and for our study. For instance, take the leaves in this illustration

—the pedate, lobate, crenate, palmate, cordate, dentate, pinate, a
other leaves. If these are drawn, instantly the technical name
registered permanently in association with the form symbolized by t
name. This is a great help to the language work of the childre
especially when they begin to dissect the plant forms, and the wo
from the many different parts begins to be complex. The technic
names can be mastered without any trouble, and some of these techni
al names are very formidable, even those describing the appearance
a simple leaf. "I have no trouble," he says, "even with children
the grammar schools [equivalent to our public schools] in getting the
to remember these terms, if they have had sufficient practice in makin
the diagrams and drawings, with, of course the auditory impression
the name associated with the drawing at the same time. Understan
I do not mean notes taken at random during a long tedious talk abou
function, growth or structure of various plants or flowers, but I mea
the close attention and clear perception of a single plant or few part
of the plant, until a complete mental structure of thought-fabri
corresponding to the plant is locked in the mind to stay. The mai
thing is to actually do and act through the eye, ear, tongue, touch an
muscular sense, etc., instead of merely reading about or listening to a
lecture upon the subject."

"We will not get love for nature unless we can appreciate the
beauty of nature. This must be cultivated. No doubt there are some
impressions some faint traces of these things left in the adult organism,
but not sufficient to arouse impulses to action or energetic moving
emotion: not enough to inspire the motor reactions that end in deeds,
though often enough to result in thinking and dreaming, and some-
times wishing. Yet, we can have a right return from nature study if
we make the right use of our opportunities. All the rambles, walks
and talks of ten teachers, all the looking and handling, are useless for
the purpose of nature teaching, unless the impressions and informa-
tion are made organic by the performance of work that compels syste-
matic reaction of the motor centres to yield a product—this being the
outward, concrete sign of the internal structure or thought-fabric. So
much of the one is shown by so much of the other."

Mr. Tadd has a strong word as to the necessity of rousing the
pupils' energies. He says:—"There is something dense in the mind
of the average child that must be overcome by this systematic work.
There is a mental inertia, if you will, or what might be called an in-
firmity of purpose, that has to be conquered before the union of thought
and action can be made automatic and complete. Hence, mere looking
at and handling objects will not give the best results desired in nature
study. And, in proof of this, we find that most school work of this
kind does not produce the expected results." The methods employed

by Mr Tadd for putting in concrete form the thought of the child do produce, he claims, the desired results in every case. The children get a loving recognition of things, and this arouses that emotetic disposition to perform appropriate actions, which is the natural state of the alert and active normal child.

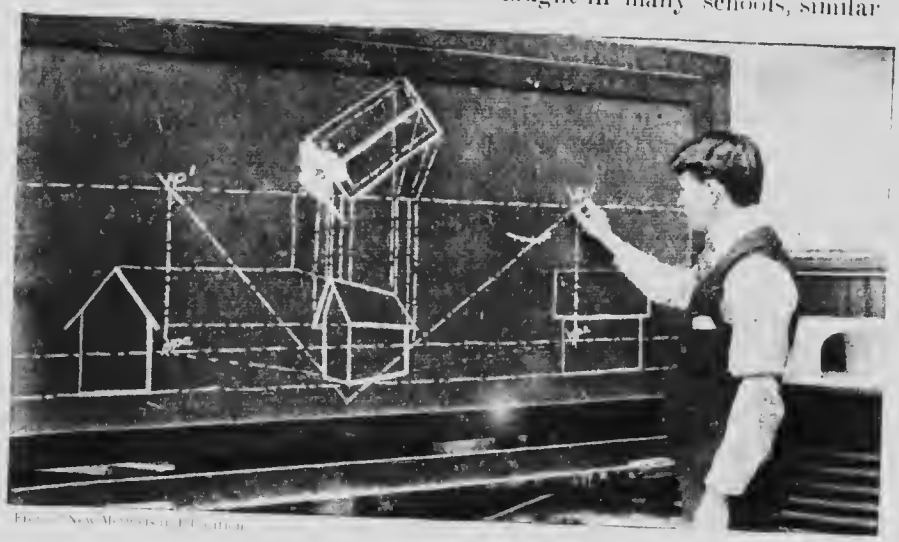
Mr. Tadd re-inforces his argument by an appeal to the physical benefits secured by the exercise of sensibility. He says, "It is dreadful to see children, as they grow up through the primary, secondary and grammar grades of a school into the high school, becoming more restless and more indifferent to some of the essentialities, when if properly trained they should have become more energetic, and disposed to carry on their work with the same energy they make use of in their play and amusements. I am afraid the element of 'fun,' with a number of other valuable fundamentals, is gradually crushed out by existing school methods. No truthful and thoughtful teacher can help but see also that many physical ills result from the present methods of training. Many children that are chubby and healthy and usually have fine color on entering school, are pale, narrow-chested, feeble, spectacled, cadaverous and pimple-faced when they have finished the school course. By damaging the body we, in a measure, damage the mind. After all, the body is the chief fabric. To this our best care should be given. Inspiration from things means energy,—physical, mental and spiritual energy. We must assimilate and accumulate this energy. We must make our children realize the divinity that is planted in things. There is a great desire and tendency in some quarters to lift the children above the common-place. Should we not, rather, make them so familiar with things that even the mud and dirt and weeds will seem filled with beauty and mystery? Make them realize the force that is in every common thing, that holds together each flower and leaf and stone; make them realize that 'matter and spirit are two sides of one fact'."

Prof Tadd uses the stereopticon with great effect in rousing and sustaining curiosity—"the appetite of the mind"—and setting all the dormant powers of the pupils on the alert. Three times each week he gives a half-hour exhibition of views having relation to the work of the School of Industrial Art. On the day when I was present he showed about fifty slides, representing great pictures, notable works of architecture and animated commercial scenes. In most cases, while the picture was on the screen, Mr Tadd would draw attention to a single point—the peculiar construction of an arch, the masterly touch on a piece of statuary or carving, the effects produced by the genius of Michael Angelo in a mural decoration, or the beauty of a spire of a noble English cathedral.*

* The total cost of these stereopticon exhibitions (apart from instrument and slides) was less than fifteen cents each. Surely here is an educational expedient that should be more generally utilized.—T. B.

MECHANICAL DRAWING AND CONSTRUCTION.

It must not be supposed that the so called Tadd method neglects or depreciates Mechanical, Architectural and Constructional Drawing and Work. On the contrary, the exhibition which I witnessed in these branches in the Roman Catholic High School was remarkable in variety and quality, comprising hundreds of architectural and mechanical drawings (original and blue prints) ready to put in hands of builders and machinists: actual patterns, made in wood by boys, ready for the moulders; cabinets, chairs and other articles of furniture built as though by experts, including a large vestment case for cathedral—all these most precisely made and elaborately carved by boys in their teens. But Prof. Tadd's experience leads him to the conviction that constructive work as taught in many schools, similar



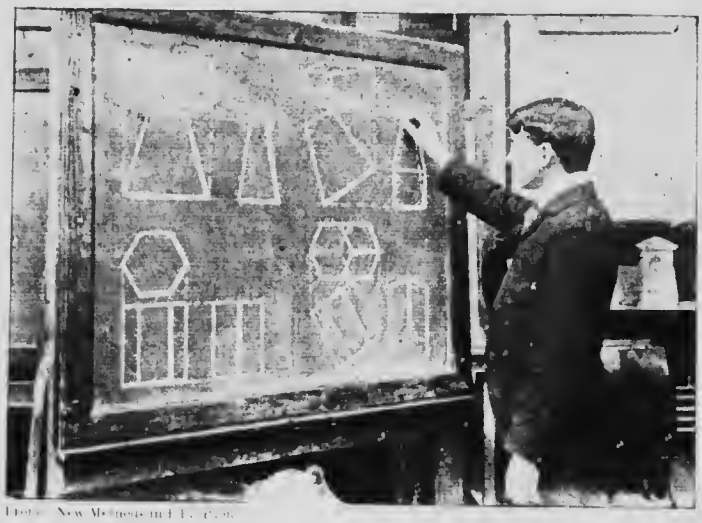
From "New Methods in Education"

Freehand Perspective

The boys are given frequent opportunity to make large drawings in perspective as above

to joinery or cabinet making, and mechanical draughting, are of little value educationally, except to the specialist, *without precious training in the art work and real manual training which he advocates*, without which a mechanical drawing is a dead object, and its execution will be devoid of all artistic beauty. "When pupils have acquired a certain dexterity of hand and accuracy of eye," he says, "and are able to draw, model and carve reasonably well, *then* it is of advantage for them to attempt constructive work and mechanical drawing. They should be about 14 years of age, or ready for the high school, and should have acquired control of their hands in manual dexterity, and be able to draw fairly well and observe accurately. Then, and not till then, are they ready for tools and tool-processes and instruments of precision."

I have not reserved space for full details of Prof. Tadd's methods in this department, preferring to give more fully his basal ideas and methods, because they differ so radically from all others. These methods are carried into the more technical work, and produce results that could not be attained if the foundation had not been laid in free-hand drawing, clay modeling and wood carving. For example, he requires that all pupils in the constructive departments should work at intervals on the blackboard. All the ordinary geometric forms and simple constructions should be drawn full size and freehand, until memorized. Sketches should also be made of architectural details, plans and styles, and the forms should be repeated and modified many times.



Pupil L. ...lections Free Hand

"Our course in mechanical drawing," said Prof. Tadd, "includes the ordinary course in most schools, the study of mechanical perspective, and of the architectural styles, and some designs and construction. In education (where we must consider the development of the esthetic principles, as well as the practical elements) such a course will be found more constructive than the usual one-sided and totally mechanical course. The teacher should strive to give a thorough understanding of the principles of mechanical drawing, but should not enter into a lengthy and detailed discussion of machines. Parallel and angular perspective are dwelt upon at length, architectural styles are similarly treated, and architectural design and construction are discussed. Our object, at this stage, is not to make draftsmen or architects, but to open up the minds of the pupils to the immense possibilities and the intrinsic beauty of the subject. This course will be as valuable to one desiring to devote his life to fine art, as to one who

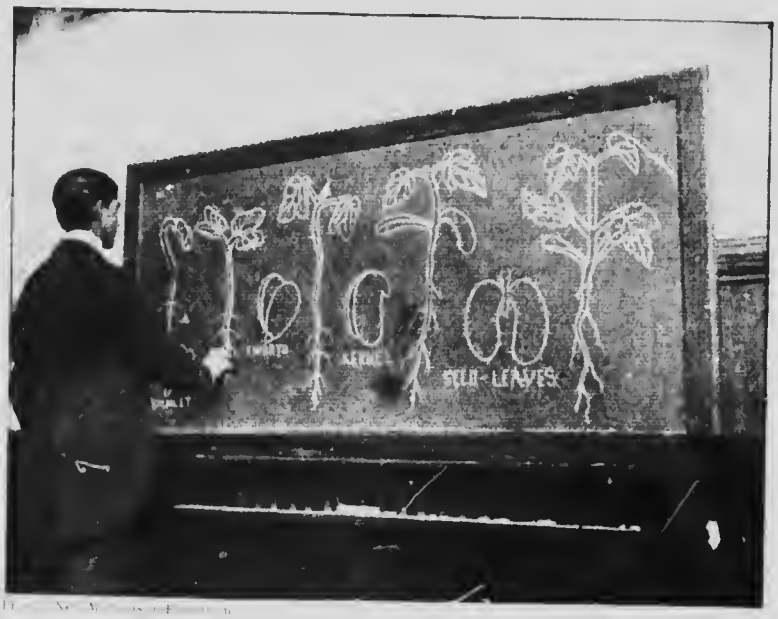
wishes to become a mechanical engineer, an architect, draftsman farmer, etc., while at the same time it embraces real manual training.'

In teaching the mechanical side of manual training, Prof. Tadd urges thorough and constant instruction on and discussion of all tools, materials and forms made. Nothing should be taken for granted. Every tool should be explained thoroughly and its use made manifest in as many directions as possible. Lessons should also be given on the various woods, glues, varnishes, nails, etc., and upon the use and applications of the constructions made. "It is of great importance," he adds, "that the course should contain exercises in making the principal typical forms. Don't attempt too many forms, or amateur or freak forms—a weakness in many methods. This error is caused by an undue desire to show finished product and useful articles. While this is an important factor, it should not dominate the desire of obtaining the greatest amount of skill and training. Each pupil should be provided with a note book and sketch book, in which he should write descriptions of the tools and their uses, and also make rough drawings and an isometrical view of each exercise."

After learning the manipulation of the most important tools and appliances, the pupil is ready to construct the simpler forms of joints—first, the plain butt, miter, half and slip joints, later the varieties of these. Another feature of value is the construction of geometric forms, such as cubes, prisms, cylinders, cones, etc. These forms are especially valuable as exercises, because they require logical thinking and render necessary various consecutive steps in their construction, as well as yielding unusual manual skill. After this, pattern-making may be taken up. Beginning with a thorough discussion of the subject, the pupil is then ready to construct some simple pattern, such as wrench, crank, sledge hammer, head, brace, etc. Next in order may be taken the various complex joints, such as the mortise, dovetail, brace joints, the scarfs, and varieties of these. Then advanced geometric forms may be taken—pyramids, cones, grooved cylinders, cone in sections, etc. Advanced patterns come next, such as model for weight, cast-iron bracket, fly wheel, and parts of machinery. The greatest skill is typified in advanced construction. This embraces frames, cabinets, furniture, sashes, doors, roof trusses, etc. Sometimes it is well for an advanced class to combine in constructing some large project, such as a frame house, or a large piece of furniture similar to a vestment case, or case of closets for museums, or book-cases—anything suitable for school purposes. Nearly all the elaborate apparatus in wood used in teaching physics can be made by the boys in a class of this character, and also many useful things required in laboratories.

"The teacher is as yet comparatively rare," says Prof. Tadd, "who is capable of giving this phase of rational manual training, just as the

teachers are not yet numerous who have mastered drawing and modeling in connection with school work; but the sphere for such teachers is large and increasing. No branch of education offers so fine an opportunity for teachers both for usefulness and for pecuniary reward. And the teacher who masters both the Art side and the Mechanical side of real manual training will have the still wider opportunity that awaits the real master in any profession."



Memory Drawing of Elementary Botany

A VISIT TO ONE OF PROF. TADD'S NIGHT-SCHOOLS.

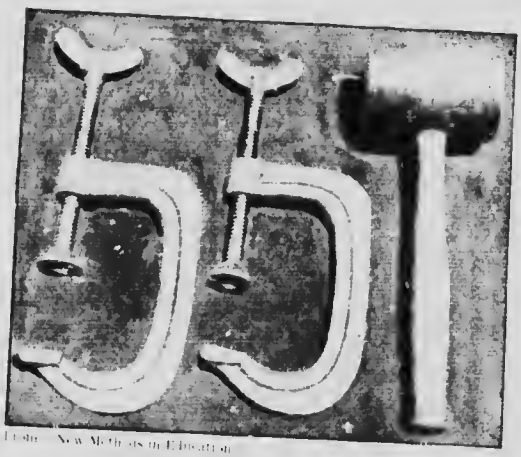
Three score children off the streets—newsboys, "gutter-snipes," bootblacks, with some scholars from the public schools—a mixed crowd from homes of the working-classes and worse, some with dirty sweaters instead of shirts, and no clean linen visible anywhere—some of these lads with truly forbidding faces, and foreheads slanting towards crime—such was the "raw material" upon which Mr. J. Liberty Tadd's night-school teachers were working as I entered the basement of a church in Philadelphia last winter. This was a mission night-school, and instead of getting together these lads and drilling them in Boys' Brigade work, or holding a devotional meeting, the church officials had thrown open two warm, comfortable and brilliantly-lighted rooms in which the boys could expend their surplus energy in doing art work.

The reader will be sceptical as to the character of the work. He need not be; it was real art work that I saw—real nature study—real

manual training; and these boys were so absorbed in it that they took no notice whatever of the arrival of Mr Tadd and myself. Why should they? They were not to be catechised in the presence of the stranger; they knew they would not have to "show off" to the visitor they did not care who came and went; each one was interested in his own piece of work, which to him was sacred, for it was his very own —the creation of his own brain, without even a suggestion from the teachers.

The whole scene was a revelation to me—not as to juvenile absorption, for I knew that all boys have an affinity for tools and a passion for making things; but what surprised me was the boldness and originality of design which these unkempt urchins displayed. No two designs were alike, yet all were absolutely original

Let the reader come with me to the wood-carving room. The noise is like that of a boiler-shop. What's all the hammering about? Why this tremendous energy in plying mallet and chisel? These firm-set lips, the do-or-die expression upon these faces —many of them innocent of soap-and-water —whence come these, and wherefore? Ah! The answer to these questions tells the whole story, which is of intense interest from start to finish. Let us learn the story of a typical case, and follow it in its various stages of development.



Clamps and Mallet for Wood Carving

Young Tousle there—the boy wearing the green sweater instead of a shirt—used to loaf along the street in evenings and peer in curiously at the "kids" that were working in wood and in clay, and in colors as well as black on paper, and with white chalk on blackboard. He used to wonder what it all was about. The managers of the scheme understood boy nature pretty well, and they arranged a little trap to catch young Tousle. This trap consisted of a small ante-room, warm and well lighted, and furnished with a blackboard and chalk. Tousle stole into this room one cold night, and finding no one about, he sat down to enjoy the warmth and light. Then, finding that the "peeler" did not arrest him, he ventured to pick up the chalk and make some marks. Then he grew bolder, and began to imitate the young black-

Blackboard Work in a Night School

(From New Methods in Education)

board artists whose work he had seen through the window. H boyish bosom began to swell with ambition to make elaborate design such as he saw in the big room.

The next night the class met, young Tousel took his place in th ante-room, and was getting on famously with some bold but ver crude design he had "thought out" during the interval, when he wa caught in the very act by one of the church officials. He decided no to resist arrest, and told his tormentor he would go peaceably, but wa astonished, instead of being sent to the police station, to be invited int the large room. When Tousel entered the room he felt ashamed t have been caught, and he lifted his head defiantly in the faces of the crowd of "kids" that were looking at him; but no! he was mistaken —there wasn't a face lifted from the absorbing work. Tousel felt that he couldn't play the part of hero in this company, so he meekly took the place assigned him, and with the pencil and paper furnished him, he began to make marks; he neither knew nor cared what they signified, but he felt very happy. His name was registered, and on the next class-night he walked boldly into the big room and took his place.

He has been here now twice a week for two months, and this is his twelfth lesson, for his boots were so bad that he really couldn't come out in a big snow-storm, and sickness kept him home a few times. But he's getting on, as you see. He has gone through the whole series of exercises now—drawing and designing on paper with pencil, on blackboard with chalk, two-handed work on blackboard, with large and bold lines; modeling simple objects in clay; designing on hard oak and carving out the design with chisels and mallet; and now he is working at an original design.

"But what is that dirty piece of manilla paper under his left hand?" you ask.

"Why, bless you," replies the teacher, "that's his rough draft—what an artist would call a 'study.' Do you see what he is doing? You think he is vacantly gazing at the wall. Not at all; he is silently but most intently studying the designs that are hanging there—we like to encourage the boys by putting their best pieces on the wall, along with the models and masterpieces of great artists. I think Tousle is studying how he can improve his design."

"Oh!" you say, "he means to copy the design of one of the other fellows? Surely you don't call that original art work?"

"If the design is better than his own, why should he not copy it? It would certainly be educative for him; but you need not fear that Tousle will copy: all these boys have to much pride in their own work for that."

"But where did he get the design on the manilla paper? I suppose you gave it to him?"

"Not at all; we never do that. each boy must find his own feet here, and walk on them. We don't lecture them, or give them anything in the way of designs. All we do is to press the button: and they do the rest."

Let's walk over to Tousle's desk and hear the talk. The teacher demands of him where he got the design? He replies that he made it at home. From what? she asks. Out of his head, he replies—meaning of course, that he had called forth from his memory and combined various units of design which he had locked into his brain by making them with the hand—on paper, in chalk, in clay, in wood—as well as by seeing them in various combinations on the wall and black board. And now he tells the teacher that he is looking around for ideas for improvement of the design before he commits it permanently to the clean white paper before him—for he knows he must not rub out, or smudge, or fix up the design, but must execute it freehand in bold outline.

So here is young Tousle, the street Arab, who very likely would have developed into a criminal,—here he is, an embryo artist an original designer, doing work which to him has as much significance as though he were a great painter preparing for a "sitting" of the sovereign or president. He is transformed; he is saved to society. in a year or two he will be making good wages in a machine shop, or designing in a carpet factory, or working in an architect's office,—doing respectable and profitable work for himself and the race, an ornament to society and a credit to his teachers.

This is education—the developing of the fundamental powers of head and heart and hand

I attended the closing of one of Prof. Tadd's night school, on April 29th, 1902. The attendance up to that time had been regular, and the roll-call was complete to the last night. The same remark applied to his other night schools for manual training and art work; yet the free public night schools held under the auspices of the Board of Public Education—in which were taught the ordinary English branches—had been closed a month previously for lack of pupils!

THE PRACTICAL IMPORTANCE OF DRAWING.

Drawing is a tool of universal application Carlyle declared he would rather have known how to draw than to read.

Any one can learn to draw who can learn to write—this is the positive statement of artists and teachers of penmanship whose opinions are entitled to weight, such as Rembrandt Peale, Prof. Minifie, J. Liberty Tadd. This is certainly not the opinion of the mass of people, who believe that some special gift is necessary before a child can learn to draw.

"Drawing is the natural and universal language of man and should be cultivated as the first guide to all that can be done by hand, and taught in every school, a preliminary to all other instruction, as it affords the best early occupation of children, and lays the foundation of knowledge in accuracy, perception, habits of order and precision besides its moral influence on the mind of youth and its ultimate advantages in every business life." Such are the weighty words of Rembrandt Peale, the veteran artist himself one of the distinguished family of artists, widely known as the artist who painted the last portrait from life of Washington. Mr. Peale gave emphasis to the truth thus expressed by devoting several years of his old age in teaching drawing in the Philadelphia High School 1840-1844. His work on "Graphics" had an immense influence in those early days, and his advocacy of Drawing as a school study, especially in its relation to Writing, no doubt laid the foundation for Mr. Leland's work which began in Philadelphia exactly forty years later.

The importance of drawing as a basis for educational development as well as for art, design, manufactures and science cannot be too strongly impressed. As Mr. Peale well says, "Drawing is the most useful of arts, because it is their handmaid in arranging and defining their purposes.....The rudest materials are rendered precious by its influence, and every occupation in life presents occasion for its service."

Goethe wrote that "those who draw well have more distinct conceptions of what they see, and explain their views with more certainty and effect. He therefore deems it an object of the greatest importance to cultivate in young persons, by means of drawing, a facility and accuracy in discriminating the characteristic forms of objects at first sight; and adds, that persons who never see attentively, and whose eyes convey but dim images to the mind, never become good observers, and seldom close reasoners; nor does their memory long retain those ill-defined images and superficial impressions.

One of the trustees of Girard College, Philadelphia, said: "Drawing ought not to be left to the option of the scholar; the child *must* learn to draw as it *must* learn to write."

Comenius, away back in the 16th century, begins his famous book, "The World in Pictures" (Orbis Pictus)—the first picture book for children ever published—by representing the Master saying to the Boy, "Before all things thou should'st know the plain sounds of which man's speech consisteth, which thy tongue can imitate and thy hand can *picture out*."

No one pursuit will educate the eye quicker than firm free-hand drawing on a large scale on the blackboard—so says Prof. Tadd after an experience of a quarter of a century.

An eminent writer on Architecture has very truly said "One workman is superior to another, other circumstances being the same, directly in proportion to his knowledge of drawing, and he that is ignorant of this art must in many respects be subservient to others who have obtained that knowledge."

Prof. W. N. Hailmann, Ph. D. says: "Art represents the highest formulation of thought. In art man formulates his most delicate and far-reaching abstractions. A mental act is incomplete unless through its feelings and thinkings and willings it reaches the corresponding deed. The hand is the projected brain, through which the directing thought achieves the heart purposes of man. The man mediates inwardly and outwardly between man and his environment, makes him and his environment one, stimulates and establishes thought, awakens brotherly love, and the aspirations of brotherly love."

Sir William Hamilton said, "The primary principle of education is the determination of the pupil to self-activity." This principle is better worked out by drawing than by any other school study.

Mr. Chas. G. Leland, the originator of the Public School of Industrial Art, Philadelphia, is himself an excellent illustration of the argument on which he founded that School, viz., that Art is a universal instinct, and that all humans can learn to draw. He was 56 years of age when he organized and conducted the actual teaching of Drawing and Art work in 1878; yet, writing of less than ten years before that he says: "At this time (1870) I could hardly draw save in a very humble fashion indeed, and little dreamed that I should execute for expensive works illustrations which would be praised by my critics, as strangely happened to my 'Gipsy Sorcery.' For it actually came to pass that a very well known man of letters, while he spoke of my style as 'rigmarole', s[illegible]nised my pictures."

The Committee on Pedagogics of the National Council of Education, held at Nashville in 1889, reported as follows:—"Your Committee would further suggest that no justice has yet been done by the advocates of Manual Training to the claims of Industrial Drawing as a training for the hand and the eye and the esthetic sense. If the pupil pursues this study by the analysis of the historical forms of ornament, and acquires familiarity with useful outlines and a genuine taste for the creation of beautiful and tasteful forms, he has done more towards satisfying the economic problem of industry than he could do by much mechanical skill. The great problem in the industry of nations has come to be the esthetic one—how to give attractive and tasteful form to productions so as to gain and hold the markets of the world. Drawing is the best means of acquiring familiarity with the conventional forms of beauty in ornament—forms that express the outlines of freedom and gracefulness, and charm all peoples, even those

who have not the skill to produce such forms." Surely no pronouncement could be stronger than the above, or come from higher authority (for Dr. Harris, the U. S. Commissioner of Education, was a member of the committee), in complete endorsement of the methods pursued in the Public School of Industrial Art, which place chief emphasis on drawing, designing and art forms, rather than tools and machine work.

DRAWING CORRELATED WITH OTHER STUDIES.

"One of the greatest troubles with drawing by the old method," says Prof. Tadd, "is that it seems to be entirely apart from the other studies, a mere accomplishment, something for the select few, the ones who display a certain amount of talent. This is all wrong. Drawing and manual training are especially suited for backward and dull pupils; they are the very ones who most need its training.

"Drawing can very readily be made one of the most vital of studies, one of the most important. It is the study on which half the drudgery and tiresome work of the school can be placed. It is the study that makes pleasing and interesting to themselves the work of the pupils. Drawing and manual training, above all other work studies, will enable the child to work out its own salvation, in the fact that they form a disposition to action and allow the child to make the energetic movements that are so good and proper for its well-being.

"Drawing in the past, to many teachers and children, has consisted of mere imitative work from a few type forms,—meaningless blocks. It has not been made a vital and connected part of their other studies. If children are to know things, to gain knowledge (and their coming to school is for this purpose), I know of nothing that will take the place of the right kind of instruction in drawing, as it compels their attention to things, if properly presented.

"Take, for instance, a rural school, where the children get a little reading, writing, and arithmetic, in homeopathic doses, and very little of anything else. See what glorious possibilities and potentialities there are here, if the teacher has any idea of drawing as it should be taught! Right at the door is the whole field of nature—plants, flowers, insects, animals, stones, fruits, vegetables, can be procured without any trouble. The children are delighted to bring almost anything in the way of models of this kind. If they are near the sea shore, the boys can get endless forms of life in the way of seaweeds, shells, crabs, fish, etc. If in the mountains, the same can be done with different kinds of plants, weeds, stones, birds, fish, insects, etc. These forms can be drawn, and the reading, writing, arithmetic, spelling, composition, punctuation, and other studies hung on as incidentals. The children will be fascinated and inspired at first hand. They will take an added interest in their work, especially when the doors of their

minds are opened and the things of which they see so much and know so little are transformed for them.

"Farmers' children and others should know all about the birds, bugs, caterpillars, flies, spiders, weeds, plants, the flowers and common growths of their environments, and thus have matter that will be of value and an aid to them in their future life. This is very much better than cramming them with disconnected facts of history of far-off countries, incidents in the lives of kings and statesmen, that are not of much value. Of course the young should become as completely educated as possible, but they are to have one thing or the other, let them get, first of all, direct knowledge of their own environment.

"There is no reason, even in city schools, why similar work should not be done; though the country child has far greater advantages in the way of studying natural forms, the city child has many compensating advantages. Nearly all children can get from their homes and from their friends any of the simple common things in the way of leaves, plants, shells, animals, etc., that are the fundamentals of study, and with which we should first fill the mind of the child before we attempt to give higher thought studies.

"I can already see this change coming in many places, although so far it is mostly in the way of introduction of things that have utilitarian value alone,—trades similar to carpenter work, cooking and sewing, which to me simply consume the valuable time of the children without educating them. I think the time is near at hand when the true idea will be received. Institutions like the Drexel Institute, the Armour Institute, the Pratt Institute, are simply, in my mind, protests against the old methods of education. They are schools where the pupils *learn by doing*, and though in some cases, trades are taught instead of real education being given, I think the latter will be the next step.

"No one can see how newspapers and books are changing, with their endless pictures and illustrations, no one can see the improvements and means of getting better pictures in all directions, without realizing that this must have a great influence on the education of those to come. The same is true with regard to smooth roads, electric lights, the bicycle, etc., all influences that are tending to make life easier and better. Some of the papers and magazines to-day are real works of art. Continually they are pouring out on the multitude streams of visual information that must have an influence. The school is bound to keep in line with these things! Better methods and better text-books and appliances must be used. The old methods *have* to change, and the teachers, too.

"Appliances in the schoolroom that have been used for 20 years are still being used in the wrong way, and at the wrong time, such as

copy books and drawing models, imitations of copies, etc. In some schools, systems of geometric forms (wooden ones) are used during the entire eight years of the school life of the child by teachers who have never been able to draw from the beginning.

"Can anyone fail to realize how tired and weary the children must become of these things, and especially when they do not find any vital connection in them with their work? We cannot expect the children to do this when we find teachers unable. All artists know how unreasonable it is to expect a product in drawing from children if they receive only a few homeopathic doses of 'construction', 'representation' and 'decoration' a few minutes a week. The artist knows how many hours of study and actual delineation must be given before even an ordinary amount of capacity is achieved.

"The whole subject, however, assumes a very different aspect when drawing is used as one of the chief instruments of impressing the organism through all its various sense channels, and is also used as one of the chief instruments of imparting knowledge in all its various branches, being a mode of thought expression, just as speech and writing are modes of thought expression.

"Meissonier thought drawing one of the bases of primary education, and said: 'To what heights might their intelligence be trained by simply teaching them to see!' I would have drawing made the basis of education in all schools. It is the only language that can express all things. An outline, even ill-shaped, conveys a more exact idea of a thing than the most harmonious sentences in the world. Drawing is absolute truth and the language of truth should be taught everywhere.'

"I like my pupils and teachers to understand the distinction there is between sketching from nature and designing. In the one case we put down *facts*, and in the other *ideas*. There is a tendency for many pupils to sketch only from nature. We get our ideas by thinking as well. More time should be given, then, to dwelling on our impressions and to systematic mental reproduction, and to giving expression to these ideas constantly by designing and creative work.

"To get good art work we must have good ideas, and they must be tangible and concrete ideas that we can instantly revive at will—that will recur automatically to the mind when needed. We can revive expression of things, and we ought to be able to revive ideas in the mind. They must be placed there first. They must be firmly locked into the mental fabric by the systematic performance of deeds, not only once, but many times. The more experience I have the more I can embody in these ideas: facility of expression giving accuracy of perception. The more I know of history, countries, religions, governments, climates, habits, the more of value I can put in my work.

Work in Clay Modeling, Public School of Industrial Art

"We must take in things, assimilate them and form ideas, and then we will have an outcome. The more we practice this, the more facility we will find ourselves obtaining. It is always possible to revive ideas in the mind and to make mental movements and co-ordinations. The more we do this, the more vital force we will have, the more deeply we will realize and appreciate things. We will begin to understand what inspiration means."

DRAWING IN RELATION TO WRITING.

"Writing is little else than drawing the forms of letters; drawing is little more than writing the forms of objects." Therefore Mr. Rembrandt Peale argues that "the art of writing, to be taught consistently with nature, ought to be treated as subordinate to that of drawing." The practice of writing, when acquired previous to and independent of drawing, in his opinion spoils the hand and mars its freedom by confining it to a few particular forms on a contracted scale instead of cultivating it in a general ability for all forms.

German educators teach the children in the infant and primary schools to draw long before they commence writing, and by this course writing is acquired much more readily and correctly than by the method usually followed, of teaching writing first. Prof. Minifie, of Baltimore, considered this the most rational mode of proceeding, for in drawing, the eye becomes accustomed to judge of direction and distance, and the hand to execute with more or less precision in accordance with the judgment so acquired; therefore when the student is put to writing his first copy, composed of straight, parallel, equidistant lines of equal length, he goes to work instantly, and can at once judge if a line is incorrectly written. It is the want of this knowledge that renders it so difficult for children to learn to write, and its acquirement in after life will always tend to improve a handy penman. On examining a copy-book used extensively in the Baltimore Schools, Prof. Minifie found that one page was calculated for the writing or drawing of 200 straight lines, another page for straight lines with a curve at the top, the next for the same number of straight lines with a curve at the bottom. "Let us suppose," he says, "that a boy writes only ten each of these copies, which must be considered a very moderate computation, he would, by writing them, draw 2000 straight lines, and 4000 straight lines joined to a curve. This is a very large drawing practice, but it is only a drop in the bucket compared to the continued practice pursued day after day and year after year."

Pestalozzi said that the child should learn to do everything in *perfection* from the beginning, which he will not be able to do in writing unless this acquirement be built upon an elementary course of drawing. Pestalozzi grouped all elementary knowledge into three

great divisions—language, number and form—the latter imbracing drawing and writing.

Rembrandt Peale worked out a system of "Graphics" which involved a training in hand-writing as well as in drawing, and his success in improving penmanship by means of drawing was quite as remarkable as his work considered purely from an art stand-point. Prof. John S. Hart, who was Principal of Philadelphia High School when Mr. Peale taught his "Graphics" there (in 18[illegible]i, "I never knew classes turn out such uniform examples of goo[illegible]pe[illegible]manship as those who went through Mr. Peale's system. The b[illegible] the Philadelphia High School were promoted in all the comme[illegible]establishments in the city for their good writing." Prof. Becker, teacher of writing in the same High School, testified to the controllers, "those pupils who had been longest with Mr. Peale made five times the improvement of the others. Four-fifths of them executed specimens of writing that were deemed worthy of being exhibited at the examination. I have changed almost my whole method of teaching writing in consequence of Mr. Peale's suggestion, and found the greatest benefit from it." Prof. Frost, the teacher of composition, testifie that the writing of the pupils, which had been miserably bad, in fact "hardly legible" before Mr. Peale's appointment, had undergone immediate and general improvement, although writing was not specifically taught in the school at the time this improvement took place. He attributed the change to the instruction received from Mr. Peale, which enabled them to do well anything which required ease and freedom of hand. Principal Hart made the astonishing statement that at the Edge Hill School at Princeton, where he had formerly taught, 40 boys with ten hours a week spent in writing lessons, made less progress in writing than did 360 boys of the High School under the Peale system, with only 13 hours a week of the teacher's time given to the entire class of 360!

Prof Bache of the Philadelphia High School said, "The principles of form and proportion involved in writing and drawing are the same. Writing is an application of the general principles of drawing, requiring merely a peculiar practice of hand, in addition to readiness in recognizing and imitating forms. Learning to draw by the eye," he adds, "facilitates many other branches of instruction—geography, especially among the elementary branches; mathematics and its application; mechanics and natural philosophy; chemistry; natural history."

The idea expressed by several of the writers above quoted, viz., that drawing should precede writing, is well put by Prof. Tadd in his book, "New Methods in Education," thus:—"Under the old method of education, the time being chiefly given to the study of words,—

printed, written and spoken,—the printed and written words (symbols for ideas) are studied at the expense of the ideas themselves. This leads to false or partial ideas and weak imagination. The vision is used too much, the pupil reading and writing at the expense of eyesight. The focal length is frequently shortened, and the too frequent use of fine finger movements required in writing causes, in many cases, nervousness and chorea (St. Vitus' Dance)." The remedy suggested for these troubles is that "Some of the time given to writing should be given to larger movements, to hand and arm movements,—finger coordinations coming last. This also improves the writing."

ART STUDIES IN PUBLIC SCHOOL WORK.

Mr. Edward T Steel, through whose far sighted sagacity Mr. Leland's work was taken over by the Board of Education of Philadelphia, in his report as President of that Board in 1881, states the relation of Industrial Art Work to ordinary school studies in these words:—"Mr. Leland was among the first who realized the necessity of combining manual with mental instruction. It is admitted that the needed general instruction of this kind cannot embrace the special arts and the trades, but must be of a preparatory or rudimentary character, such as training the eye and the hand, and including design and the principles of construction. In this connection, and as a fundamental part of Industrial Education, it is proper to state here that marked progress is being made in the teaching of drawing."

In his report for 1883 President Steel said, "Manual and mental co-education, which is destined to become the system of general education of the future, has a far deeper root and foundation than the incidental conditions of the trades. It is nothing less than the adjustment of instruction to the enlightened purposes of life, as understood at the present time..... The complaints of our system of education, which are becoming more and more pronounced, have their justification in the fact that its underlying principle of abstract teaching was devised for the preparation of philosophers and metaphysicians."

THE HYGIENIC VALUE OF CLAY.

"No medium better than clay will ever be devised to fulfil the plastic requirements of educational thought-expression, as is witnessed by its universal use in the arts and industries of all nations since the beginning of history."

In this brief sentence Prof. Tadd admirably sums up the value of clay as a working medium. It may be added that its cheapness and accessibility also commend it. Common blue clay is the best, and it

can usually be found in almost all countries at varying depths. It should be free from all gritty substances.*

A question having arisen in Philadelphia as to whether the scholars in the Public Schools might not communicate infectious diseases by working, in rotation, with the same clay, a committee of medical experts was appointed, consisting of Drs McAdam, Morton and Mattern, and after investigating the whole matter most thoroughly they reported in 1895 as follows:—

"Your Committee in conclusion would urge, as a matter pertaining to the health of the children attending our public schools, the most extended introduction possible of the present system of clay modeling, believing that such manual training is in every respect valuable and likely to be followed by the best results to mind and body."

Thus the Committee not only found no ground for fear, but on the contrary urged the more extensive use of clay, the antiseptic properties of which are well known.

A striking illustration of the hygienic value of clay came under my notice while investigating Prof. Tadd's work in the Roman Catholic High School, Philadelphia. I found one of the pupils working after school hours, and on enquiry ascertained that three years ago he had been given up by three physicians as an incurable consumptive; but he entered heartily into the manual training and art work, and he told me that it had saved his life—the freehand blackboard work with both hands, the mallet-and-chisel work in hard oak, and the clay modeling, giving him such a quantity and variety of healthful exercise that he had not only gained in health and strength, but was able to hold his own with the other pupils in the academic work of the school as well. He loved the manual training work because it had saved his life, and he spent overtime on it because of its hygienic value to him.

FOREIGN TESTIMONY.

Strong testimony to the value of the educational methods here outlined has recently come from Switzerland. It is the opinion of the Swiss delegate who was sent to the Paris Exposition to report on the educational exhibit. Mr. Tadd's work was not represented at Paris, but the delegate had seen it at the World's Fair in Chicago, and knew of it also through publications. After discussing the various methods exhibited at Paris, the delegate frankly says that he prefers Prof. Tadd's to all that he has seen; and adds, in his book, "The Garden of Children:"

"This method has great value: Simplicity of work, balance and symmetry, rapid and marvelous development of the eyes, of the intel-

* A large specimen of clay modelling—the title-page of "McMaster University Monthly," designed and modelled by my son, Elven J. Dongough, may be seen in the Museum of the Education Department, Toronto. This specimen has not been "fired," but being thoroughly dried it is extremely hard and durable.

ligence and the hands; these are the inestimable advantages that it helps one to acquire. Each pupil makes his drawings on the blackboard for five minutes with each hand, then the two hands worked together. At the end of about two years' practice the greater of the pupils are able to use fairly well the two hands. As well, the coordination of a certain group of muscles invariably influences the whole system. The eyes, the hands and the intelligence work together, producing more and better than when used separately. The pupils hold themselves erect, keep the head up, in a word they become thinking and free beings capable of reasoning and judging for themselves. Their comprehension of things becomes better, and they reach the desired end with less trouble. This is why it is before all, apart from its practical value, of disciplinary value, because it enltivates at the same time judgment, proportion and balance. This is why we recommend very strongly the introduction of the American system of education, the manual training of Liberty Tadd." [Translation]

STAFF OF INDUSTRIAL ART SCHOOL,

Park Avenue, below Master Street.

J. Liberty Tadd, Director.
Frank X. Ferg, Instructor in Wood-Carving.
Bernard Uhle, Instructor in Wood-Carving.
Frank R. Whiteside, Instructor in Drawing and Designing.
Katharine Ringwalt, Instructor in Drawing and Designing.
Helen Dunlap, Instructor in Clay Modeling
Effie F. Braddock, Instructor in Clay Modeling.
Caroline Van Gilder, Instructor in Drawing and Designing.
Caryl S. Parrott, Clerk.

REPORT OF THE DIRECTOR OF THE PUBLIC INDUSTRIAL ART SCHOOL.

To Mr. Charles H. Vanfleet, *Chairman Committee of Industrial Art Education, Board of Public Education, First School District of Pennsylvania.*

I herewith submit my report of the Public Industrial Art School for the year 1901.

Total number of pupils enrolled from Grammar Schools, Fall Term, 1,216.

	Boys.	Girls.	Total.
Monday	168	72	240
Tuesday	165	79	244
Wednesday	160	83	243
Thursday	148	97	245
Friday	149	95	244

Total number admitted ... 1,216

Average attendance for October and November, 194.5.

To pupils attending from Grammar Schools of the city 104 certificates were granted on the completion of a two years' course of study: these graduates represented forty-two schools.

The Directors' Prize for Blackboard Drawing was divided between Pauline Coverdale, of the Central Grammar School, Germantown, and Mabel J. Staub, of the Asa Packer School.

The following pupils received scholarships by competitive examination:

To the School of Design, 6. [Names omitted.]

To the Pennsylvania Museum and School of Industrial Art, 5.

The closing exercises were held in the Philadelphia Normal School for Girls, Friday evening, May 31, 1901. Addresses were made by Mr. Charles H. Vanfleet, Chairman of the Committee on Industrial Art School, Mr. Thomas A. Robinson, Mr. George Haig, Mr. Frederick A. Sobernheimer, Mr. Charles E. Davies and Mr. George N. Lowery, members of the Art School Committee. They were followed by Dr. Brooks, Superintendent of Education, and Miss Alice S. Hunter, an eloquent art teacher of much experience.*

Through the efforts of your Committee during the past season the Industrial Art School has been able to celebrate its twenty-first anniversary by moving into a more commodious school building (containing 18 rooms) on Park Avenue below Master Street, and for the first time in its history to occupy quarters of its own. We had long been cramped for space, having been confined to three rooms only on the third floor of the Hollingsworth School Building, Fifteenth and Locust Streets, but now have plenty of room for expansion.

In the old quarters over 15,000 children have received instruction in Industrial Art and in Manual Training, and over 2,000 teachers have also had brief courses of lessons in Drawing, Modeling and Carving.

In the new building each class is separate and each teacher has a single room; the class rooms are well lighted and perfectly adapted for the use of the Art School. The third floor is still unoccupied and can be utilized when funds are forthcoming. Three of these rooms cannot be surpassed for purposes of art work; owing to the adjoining houses being below the window line the lighting is exceptionally good.

I therefore recommend that three additional classes be formed to occupy these rooms. For the sum of $1,800 three teachers can be engaged, and $1,000 would furnish plant and equipment. If this is done, 450 additional pupils can receive the benefits of the school in

*Miss Hunter held a lucrative position as Supervisor in connection with the Public Schools in Manchester, Eng., but on hearing Prof. Tadd's lectures in that city, immediately resigned and went to Philadelphia with him in order to learn his methods. She is now Prof. Tadd's chief assistant, is in receipt of a salary nearly double what she had in Manchester, and is now (July 15, 1902) in England for the summer, lecturing on the Tadd methods there. T. B.

Drawing, Modeling and Carving, making a total of 1,650 pupils in the school.

Early in the year, as Director of the Public Industrial Art School, I was officially invited by Sir Henry Trueman Wood, Secretary of the Royal Society of Arts (for the encouragement of arts, manufactures and commerce), in London, England, to give the Cantor course of lectures on Elementary Art Education. This is the oldest and most important society of its kind in the world, and owing to the importance of the occasion leave of absence was granted by your Committee, and your Director visited Great Britain and delivered four lectures before the Society.

Much interest was aroused in the work and methods of the Public Industrial Art School, and at once many invitations were received from the various Public School Boards to visit their cities and explain the work as carried on in Philadelphia. Lectures were given in the following towns: London, Liverpool, Manchester, Bradford, Southampton, Aberdeen, Stafford, Stoke, Leek, Barry and others.

For lack of time, invitations to over thirty cities had to be declined.

The interest manifested in the Public Industrial Art School has been wonderfully reflected in the English press, which, both in London and the provinces, was swift to hold out a friendly hand to the lecturer. Some of the great London dailies devoted leaders to the discussion of the new ideas. The more important provincial journals were equally interested, and the educational papers were only too glad to open their columns to exhaustive articles on the Public Industrial Art School methods.

It is unprecedented that a Philadelphia educationalist and innovator, strange to the majority of the British, and known only through his book, should meet everywhere with so much sympathy, and sympathy that speedily became enthusiasm.

During the course of lectures in London, the Institute of Elementary Education of Berlin and Hamburg sent Dr. Goetz, the President of the Society, with a commission of four members to hear the lectures and investigate the methods of work. They were very favorably impressed and have since translated and published my book under the auspices of the Society. The president has informed me that this work is changing methods of education in Germany and has been very favorably received by all classes of teachers.

Some of the radical methods in the Public Industrial Art School are now being introduced generally in the Government Board Schools and Technical Schools of Great Britain, notably the memory drawing, blackboard work, nature study work, clay modeling, etc. The Scotch Educational Department, in Circular No. 294, issued from Whitehall in explanation of the code for teaching teachers, especially advocates

our methods. Some of these Scotch schools are without exception the best in Great Britain.

I could fill five hundred pages in this report with newspaper and educational paper notices since printed abroad commenting on the Philadelphia methods, nearly all in the main favorable and creditable to the Public Industrial Art School.

It is impossible to supply the demand for teachers of the Public Industrial Art School methods. I receive applications every week. Recently teachers have been sent to and classes started in the following places:

New York City; Newark, N. J.; Providence, R. I.; Dayton, Ohio; Denver, Col.; Chicago, Ill.; St. Louis, Mo.; Buffalo, N. Y.; Columbus, Ga.; Santa Barbara, Cal.; Devon, Pa.; Lancaster, Pa.; Baltimore, Md.; Montreal, Canada; and Barry, Wales. In these and many other cities the work is now being carried on.

The Art School methods have been adopted this season by Mr. O. V. Sage, Superintendent of the House of Refuge, Randall's Island, N. Y. He eulogizes the work and its suitability for such institutions.*

It is quite time that industrial art work should become part of the training of all public school pupils, especially of the Grammar Grades. In many cities the work is now being done on a large scale. Philadelphia, as the leading manufacturing city of the Union, and the first in the country to introduce real manual training in the public schools, should lead in this work instead of being one of the last. It is not creditable to Philadelphia that less than four per cent. of the children in the public schools receive real manual training.

I beg leave in this report to express my thanks to the members of the Public Industrial Art School Committee, especially to the Chairman, for many visits made to the school and much time spent during its removal last fall.

I cannot close this report without referring to the work of Mr. William Dick, Assistant Secretary of the Board of Education and clerk of the Public Industrial Art School Committee for twenty-one years. During the whole of this period he has never missed a meeting of the committee or failed to show zeal and energy on behalf of the school and for its welfare.

Respectfully submitted,

J. LIBERTY TADD,

Director of the Public Industrial Art School.

* This is an institution for incorrigible boys, similar to the Industrial School at Mimico, Ont. I had a long interview in New York with the Art teacher at the House of Refuge, who has forty boys in his classes, and the Tadd methods are found to have superior advantages for boys in whom the "work habit" is lacking. T. B.

ADMISSION TO SCHOOL OF INDUSTRIAL ART.

(Extract from Rules of the Board of Public Education, Philadelphia, Pa.)

SECTION 1. Admissions to the School of Industrial Art shall be limited to the pupils of the grades designated by the Board on the recommendation of the Committee on Elementary Schools.

SEC. 2. Applications for admission shall be registered with the Principal of said school, and admissions shall be made as vacancies occur. Pupils who attended the school the previous term shall be entitled to re-enrollment before new admissions are made, and the names of other applicants must be sent to the Principal by the Principals of the schools on or before the second Monday of the term.

SEC. 3. Pupils shall be admitted only upon the written application of their parents or guardians, and a certificate from the Principal of the school to which the pupils belong.

SEC. 4. In admitting pupils the quota shall be fixed by the Committee on Elementary Schools, and applicants shall be admitted from each school in order of their standing in drawing.

SEC. 5. It shall be the duty of the Principal to keep the Principals of the schools to which the pupils respectively belong, regularly informed of their attendance at the School of Industrial Art, and absence therefrom shall be charged against the pupils in accordance with the rules of the school to which they belong.

SEC. 6. Pupils who shall be absent two consecutive sessions, or three sessions in any one month, unless the absence is satisfactorily accounted for by their parents or guardians, shall forfeit their seats in the school. It shall be the duty of the Principal to notify the Principal of the school to which the pupils belong that their names have been stricken from the roll.

SEC. 7. Certificates shall be granted by the Board to pupils who finish the whole course of study and execute an original design in clay, wood or metal to the satisfaction of the Committee.

THE MAN

Prof. J. Liberty Tadd is of British birth, his father having been a Cornish sea-captain. At New Orleans he was talking with a very intelligent negro, when a slave driver, with whip in hand, approached them and with curses and the use of the whip, insolently ordered the negro back to work. Capt. Tadd's British blood boiled at the indignity to one who, though having a black skin, had shown himself the equal of his master in intelligence, and he promptly knocked the slave-driver down. Immediately there was a mob, and fearing bloodshed Capt. Tadd weighed anchor and departed. The following year a son was born to him and he was named "Liberty," in memory of this incident. Young

Tadd did not take kindly to classical studies, but at twelve years of age he took a certificate in drawing from the South Kensington Art School. Later, he came to Toronto and spent four years studying law here (about 1869-1872) joined one of our volunteer regiments and took a course of military training at the Old Fort. He afterwards went to Philadelphia, and became associated with Charles G. Leland A.M., in the early days of Industrial Art in that city, and since 1884 he has been Director of the Public School of Industrial Art and of Manual Training in the Roman Catholic High School and of various night schools there. He is a member of the Art Club, Sketch Club and Educational Club and of the Academy of Natural Sciences Philadelphia. He is most enthusiastic in teaching and in conversation, and is a tremendously hard worker. His whole time is spent in teaching, for as soon as the school term ends in Philadelphia he goes to his Summer School near Saranac Lake, N.Y., a most picturesque spot in the heart of the Adirondack Mountains.

THE BOOK.

Prof. Tadd's educational views have been set forth in a sumptuously printed book of over 400 pages and entitled "New Methods in Education," containing a wealth of illustration by the photo-engraving process. These illustrations, being from actual life and work and objects, fully bear out the theories and statements made in the text. The book is published by the Orange Judd Company of New York, and has gone through eight editions since October, 1898, when it was first issued. It has been translated and beautifully printed in Germany, and translations are now under way in Russia, France, Sweden and Italy. The volume really contains five books in one, and the whole subject is so clearly and connectedly set forth and so fully illustrated that intelligent readers may learn the methods from the book alone, as is now being done in foreign countries. Mr. Herbert Myrick, the President of the Orange Judd Company, with whom the publication of the book has been a labor of love, is connected with a large number of agricultural newspapers and publications. He thus tells the story of its origin: "I wanted something that could be put into rural schools universally, that did not require expensive or complicated apparatus or systems, but that would enable the children to acquire power in their own hands, cultivate their minds, develop originality, discover their natural capacity, and thus enable us to train them along the line of their natural bent. In this quest I visited the Art, Manual Training, and Technical Schools throughout this and foreign countries, and it was not until I accidentally discovered Prof. J. Liberty Tadd, Principal of the Public Industrial Art School at Philadelphia, that I found the problem had been solved with remarkable success."

NORMAL AND AGRICULTURAL INSTITUTE, HAMPTON, VA

"Learning by Doing."

THE HAMPTON METHODS.

Some day the people of this country—including the wise ones and the prudent and some of the educational leaders—will more or less suddenly wake up to the realization of a very curious fact. This fact is that by all odds the finest, soundest and most effective educational methods in use in the United States are to be found in certain schools for negroes and Indians, and in others for young criminals in reformatory prisons."

Thus is the strong statement made by Mr Albert Shaw, Ph.D., editor of the *Review of Reviews*, in an illustrated article published in that monthly in April 1900. He makes it still more forcible by adding: "If I paid $10,000 a year for it I could not possibly give my own small boy anywhere in or about New York City the advantages of as good a school as the raggedest little negro child of Phoebus, Va. [the village adjoining Hampton] freely enjoys, whose education is under the care of the Hampton Institute and is carried on under the Institute's Normal Department in the John G Whittier School."

What accounts for Hampton Institute earning such an encomium from such a well-informed journalist—himself no educational leader? In Dr. Shaw's phrase, this is the reason: "Better than at almost any other place in this country, they have at Hampton grasped the conception of what we may call *integral education*."

This definition Mr. Shaw expanded thus: "In the ordinary boarding-school or college the whole ordering of work and play, however valuable and agreeable, is so different from the work-a-day course of life in the world outside that most students find the wrench rather severe when, on leaving school, they try to take their places in the social and industrial commonwealth. There is, indeed, never the slightest danger of educating anybody too thoroughly or too highly. But there is always some danger of an incomplete and imperfect kind of education that renders it difficult for so-called educated people to find useful absorption in the general life of the community. The remedy lies in the symmetrical or integral education. The pupils in the Institute generally do acquire some accomplishments, but these are all supported upon the firm foundation of practical capacity in common things. It is enough to say that the dignity and worth of plain labor are infinitely better appreciated and understood by the young negroes at the end of their Hampton course than at the beginning."

"Learning by Doing" is the pedagogic principle that is completely worked out in Hampton. The motto of Gen. Armstrong, its founder was, "Do all the good you can, and make no fuss about it." Doing—doing for the training of the pupil's own powers, as the first step to doing for others—this is the root-principle of life and work and study at Hampton.

The work of the Hampton Normal and Agricultural Institute is many sided, having 1,000 negro and Indian students, and utilizing 59 buildings, which have grown up from humble beginnings in 1868 on a plot of land comprising 200 acres, situated on an arm of the Chesapeake Bay, two miles from the famous resort known as Old Point Comfort. The Institute property is to-day worth $600,000. General Armstrong, having had charge of a negro regiment in the Union army, determined after the war to lead the colored people to intellectual freedom, as he had led them in the war out of slavery.

Gen. S. C. Armstrong (deceased).

It was natural that the Hampton Institute should begin on an industrial basis; for General Armstrong had been trained in the home of a missionary in Hawaii who had shown his good sense by introducing manual labor in order to teach religious truth. The General's mother was apt with tools, as was his father; and a native Hawaian once asked her, "Do you know who first taught me to use hammer and plane and saw? It was you."

The aim of the Hampton Institute was expressed thirty-three years ago by its founder, General Armstrong, in these characteristic words, and it is the same to day:—"To train selected . . . youth who shall go out and teach and lead their people, first by example, by getting land and homes: to give them not a dollar that they can earn for themselves; to teach respect for labor, to replace stupid drudgery with skilled hands; and, to these ends, to build up an industrial system, for the sake not only of self-support and intelligent labor, but also for the sake of character."

Besides the home farm in connection with the buildings there is an Institute farm five miles distant containing about 600 acres. These farms serve the purpose of teaching scientific agriculture, of furnishing supplies for the school, and also of showing the students how to take

care of a small farm—a four acre plot being set aside and systematically "worked" by relays of students.

In every class-room and in the immense congeries of industries, the same spirit runs—the spirit of self-help for the sake of others; until Hampton is a synonym for all that is healthful and helpful and sane in relation to the negro and Indian problems, and indeed in relation to true education for the white race as well,—for the "Hampton idea" is permeating the whole Southland. Booker Washington is the outstanding figure in America to-day, because of his breadth and saneness of view of the problems which threaten to rend asunder the Union: but Booker Washington's entire training and education as a young man were received at the Hampton Institute. Since 1868 Hampton's graduates have taught over 130,000 children in 18 States and in the South and West are doing in their humble way the same work as Booker Washington in his more exalted station.

American History taught Objectively.
The Object is one of the Indian Students.

The Hampton Institute seeks to re-establish the industries which were well-nigh lost by the abolition of slavery: hence all the ordinary trades, or their elements, are taught, for the "work habit" must be instilled into the free negroes by education as it was into the slaves by constraint. What the negro children need above all things is the gospel of character and hard work. Seventy-five per cent of the race still live in one-room cabins on rented land in ignorance and poverty.

Hampton is also training nurses in the "Dixie" hospital, treating cases from outside as well as from the Institute—in which, indeed, sickness is rare, on account of the steady habits instilled into the pupils.

The aims and methods of Hampton are well summarized by Dr. Shaw as follows:—"Books are by no means banished from Hampton, but on the contrary they are used with immense effect, simply because they are used for real and not for false purposes. Every student in Hampton learns to draw—simply because drafting bears an important relation to the best methods of doing almost anything. The study of the sciences is carried on by objective methods; and students thus taught soon discover what books are for. History and Geography also are taught to a considerable extent in the same natural and concrete way . . . Philosophy and literature are well enough, to be sure: but there is a natural, as distinguished from an artificial way of getting at them, and in my opinion the Hampton method 'arrives' very much more surely than that which we may call the conventional collegiate method."

The Battalion in front of the Academy.

"The young men of the school are under military organization as a six-company battalion, with drill enough to have an excellent influence upon general discipline without interfering with other work or duties. There is a large brass band competently instructed and led.

"The educated young negro of the Hampton type is more, rather than less, of a negro than ever. He loves his race, and wants nothing better than the splendid chance he finds to-day in the United States to work with and for his people. He sees the true drift of things, and declines either to be despondent or defiant."

Hampton Institute is not a government or a state school. It was chartered in 1870 by special act of the general Assembly of Virginia, and is controlled by 17 trustees representing different sections of the

country and six religious denominations, no one of which has a majority. The States of Virginia gives a grant of $10,000 annually, the Federal Government pays $167 annually for each of the 120 Indian students, leaving $80,000 yearly to be paid by private contributions.

The following summary will convey a faint idea of the methods employed at Hampton in the subjects with which this pamphlet particularly deals.

MANUAL TRAINING.

No boy graduates from Hampton Institute without having worked in wood, iron and sheet metal, besides having taken a course in agriculture. No girl graduates from the school without having received instruction in wood work, enabling her to mend and make simple furniture, or without having been taught to cook and serve a meal, and to

Whittier School Pupils "Saluting the Flag."

make her own dresses and under-clothing. She is also given a fair knowledge of plant and animal life. The course for boys consists of a year of joinery, then a half year each of wood turning and sheet-metal work, and in the Senior year a choice of work in one or more of the various trade departments.

In the Whittier School, manual training begins with paper cutting and construction work in wood, with clay modeling in the kindergarten. This is followed by sewing in Room 2 for both boys and girls, and the course ends in Room 6 with bench work for the boys and sewing and cooking for the girls.

In the Normal Department practice is given in teaching manual-training, and already work similar to that in the Whittier School has been introduced into some of the public schools of the South.

The Principal reports that this thorough systematic work in the training of the hand and the eye is doing much to develop truthfulness, patience earnestness, and a sense of responsibility in our young people.

In Whittier School.

The Whittier public school, standing on the Institute grounds, is a teacher's laboratory. Its four hundred pupils, beginning with the kindergarten, represent all types to be found in any public school. Its course of study and methods are under the supervision of the Normal Department of the Hampton Institute. Sewing, cooking, garden-

Domestic Science in Whittier School.

ing, manual training and gymnasties can thus be carried on in their proper relations to the other school subjects, and by methods feasible in any school, while they are at the same time under the direction of the skilled, special teachers employed by the Institute. Actual teaching in the several grades, under careful supervision, enables every Institute student to establish and maintain similar work in his own community. The following is the course in Whittier School.—

First Grade: Stories, such as Hiawatha and the Mother Goose Rhymes, illustrated by the use of clay, pencil, scissors and color. Con-

structive work in paper, envelopes, and boxes for seeds. Knife work in thin wood—labels, fences, dibbers, etc. for the garden.

SECOND GRADE: Clay modeling of fruit and vegetable forms. Paper constructive work, envelopes, etc. and articles of furniture for a doll's house. Knife work—boxes, tables, chairs, bedsteads, etc. for a doll's house.

THIRD GRADE: Knife work in thicker wood. Use of simple bench tools in the manual-training room during the second half of the year. School and garden apparatus.

FOURTH GRADE: Elementary bench work, including a modified course of sloyd. Repairing class-room furniture, making a miniature house for the lower grades.

FIFTH GRADE: Advanced bench work, including a modified course of sloyd. Class-room repairs, laboratory apparatus, etc.

In Hampton Institute.

The following are the requirements for the three years course in Manual Training in the Institute:—

FIRST YEAR.

BOYS:—*Course in Bench Work requiring 100 hours.* Exercises consist of the following.—Measuring on a plane surface with rule and knife, squaring with try-square, gauging with marking gauge, sawing to a line with rip, cross-cut, and back-saw, planing to true surface, testing with steel square and by sighting, planing to size with sides square and true, planing ends smooth and true with block plane, lining rough lumber with straight edge and pencil, making the half joint or box halving, making the dado or cross groove, nailing butt joints, mortising and tenoning, boring, making joints fastened with screws, glueing, making a smooth surface with plane, scraper and sand paper.

Grooved work, making mitre joints, making irregular bevels, making dovetails, laying out and sawing curved work.

In connection with the above course in bench work, each exercise is first worked in free hand or mechanical drawing from a model; the model is then set aside and reproduction made from the drawing.

The above principles are applied in the construction of finished models which may be used by the student, such as boxes, for collars, cuffs neckties, etc., bookshelves, inkstands, printing frames, picture frames, drawing boards, Tee squares, etc.

GIRLS:—*Course in Sloyd.*—The Junior classes devote from two to three hours per week to sloyd. Their work includes the course as arranged for the first and a part of the second year for grammar schools. They are required to make working drawings for a part of the models; others they make from drawings placed upon the board

by the teachers. The regular course of models is given below, together with the exercises upon which they are based. To this course have been added, from time to time, supplementary models adapted to the needs and qualifications of the individual pupil.

The model presented must appeal to the interest of the worker, and should be useful from her standpoint.

It must be esthetically good.

It must be sufficiently difficult of execution to call out a vigorous exercise of the best efforts of the worker, while at the same time it must be sufficiently within her powers to admit of fairly successful achievement.

The classes are conducted on the plan of both class and individual work; class work whenever every individual may be reached by it; individual, when especial attention is required.

Sloyd Work in Whittier School.

The endeavor is to find such supplementary models as shall reach the daily interests and experiences of the student—something that shall touch both what they do know and care for, and that which they are growing to know and care for. It is sought to develop character through a cultivation of concentrated effort, sound judgment, habits of forethought, neatness, accuracy, industry, and honesty of work, and incidentally a practical knowledge of materials and tools.

Models.—1. Wedge. 2. Flower pin. 3. Flower Stick. 4. Penholder. 5. Tool Rack. 6. Coat Hanger. 7. Cutting Board. 8. Flowerpot Stand. 9. Flowerpot Stool. 10. Bench Hook. 11. Hatchet Handle. 12. Corner Bracket. 13. Hammer Handle. 14. Key Board. 15. Paper Knife. 16. Ruler. 17. Towel Roller.

Exercises.—1. Straight whittling. 2. Oblique whittling. 3. Cross whittling. 4. Point whittling. 5. Sandpapering (without block). 6. Rip Sawing. 7. Narrow surface planing. 8. Squaring. 9. Boring with drill-bit. 10. Fitting a peg. 11. Curve whittling. 12. Cross-cut sawing. 13. Ganging. 14. End planing (in bench hook). 15. Boring with auger bit (vertical). 16. End sandpapering (with block). 17. Curve sawing. 18. Smoothing with spokeshave. 19. Boring with bradawl. 20. Broad surface planing. 21. Vertical chiseling. 22. Horizontal boring 23. Filing. 24 End planing (without bench hook). 25. Nailing. 26. Sinking nails. 27. Making halfed-together joints. 28. Countersinking. 29. Glueing. 30. Screwing. 31 Modeling with spokeshave. 32. Scraping. 33 Beveling with spokeshave. 34. Oblique planing. 35. Spacing with compass. 36. Veining. 37. Carving. 38. Wedge planing. 39. Filing edge. 40. Notching. 41. Punching. 42. Beveling edge with jack-plane and file. 43. Boring with centre bit. 44. Planing a cylinder. 45. Fitting axle.

MIDDLE YEAR.

BOYS:—*Course in Wood Turning, requiring about 120 hours.* Turning between centers, centering, roughing with gouge, turning to size, testing with calipers, smoothing with skew chisel, measuring and cutting to length, turning straight tapers, outer curve, inner curve, combination of curves in making chisel handle, testing by the eye, cutting shoulders, cutting beads, cutting flute, turning section on square piece, sandpapering, polishing with shellac.

Face Plate Work:—Knob, corner block, match box, barrel, vase and napkin ring.

In connection with the above exercises there are taught the following: Reading drawings, lessons on materials used, care of lathes with names of parts.

Course in Tinsmithing, requiring about 100 hours.—Laying out and developing patterns for cylinders, cones, pyramids and other geometric forms. Cutting to straight and curved lines, joining edges by seaming, riveting and soldering. Making up useful articles, such as a tin cup, square pan or box, covered pail, dustpan, etc., two- and three-piece elbows in stove pipe, making T joints, Y joints, sheet-iron dripping pan, and chimney top. Use of fluxes on tin, galvanized iron, copper, lead and zinc. Use of all the common tinners' tools and machines.

GIRLS:—*Sewing.*—Continuation of the work of the Junior year. Each student cuts and makes herself a full set of underclothes.

Cooking.—Two lessons per week for four months. Instruction is given in the care of the kitchen and kitchen utensils; care of dining

room; cookery of vegetables, cereals, meats, soups, desserts, breads, tea and coffee; making of yeast; preparation and serving of meals; table laying and waiting.

SENIOR YEAR.

BOYS:—*Course in Forging, requiring about 120 hours.*—The building and care of fires. Heating the iron. Drawing square iron to a point, to flat, to bevel, and to round. Drawing from round to square, from square to octagon, from octagon to round. Bending rings of round and flat iron. Pointing and bending a staple. Drawing, bending and twisting in making a hook. Upsetting and forming square and hexagon head bolts. Punching and cutting square hexagon nuts. Bending, twisting and punching flat iron.

Sewing Class at Whittier School.

Upsetting, drawing, bending, punching and chamfering, square angle piece. Upsetting, welding, forming, and punching, introducing case hardening in making heading tool. Drawing and upsetting nails and rivets in heading tools. Butt welding. Bending, scarfing and welding in washer making. Bending and welding in making chain.

Forming, punching, slotting, and bending a hasp. Laying off and forging diagonal brace. Forging eccentric strap. Drawing out bending and threading eyebolt with ring. T welding. Jump welding steel. Forging S wrench.

Drawing cast steel and introducing tempering in making cold chisel. Forging and tempering flat drill. Forging and tempering hammer. Drawing, bending, punching, and tempering arch spring. Forging and tempering lathe tools. Welding steel to iron. Forging blacksmith tongs.

In connection with the above course will be brought in the reading of drawings; the construction of iron, steel, etc.; the study of fuels and their combustion, the study of tools and their parts.

In place of blacksmithing, Senior boys are sometimes allowed to take mechanical drawing or to spend their time in some of the trade departments of the school.

Senior Class in Manual Training.

GIRLS — *Sewing* — The object of the Senior course in sewing is to enable each young woman graduating from Hampton to draft, cut and make her own dresses.

Drafting — Drafting and cutting of skirts and waists.

Dressmaking Making models of dresses which afford practice in designing, putting together and finishing lined suits. Each pupil makes a wash dress for herself.

HOME TRAINING FOR GIRLS.

Basket Making.

The principal objects of the training given to girls at Hampton Institute are as follows:—First. To enable them to make good homes; Second—To send out strong teachers, well-equipped for both academic and industrial teaching.

HOUSEWORK. All the housework in the girls' dormitories and teachers' rooms, including chamber-work, sweeping dusting and scrubbing is done by the girls.

LAUNDRY WORK.—In the school's steam laundry the girls do all the washing and ironing of the student's boarding department and the Teachers' Home. The following

course in the chemistry of laundry work is planned for the students who are engaged in this industry.

Chemistry of Laundry Work.—This includes laboratory work on acids and alkalies, hard water and "breaking" agents, solvents and emulsifiers, saponification, and blueings. The aim in this course is to familiarise the operator with the principles which underlie the best laundry methods and to make her a thinking and questioning worker

Cooking.—*Junior and Middle years.*—Two lessons per week for four months. Instruction is given in the care of the kitchen and kitchen utensils; care of dining room: cookery of vegetables, cereals, meats, soups, desserts, breads, tea and coffee: making of yeast; preparation and serving of meals; table laying and waiting

Cotton Spinning and Rug Weaving.

Normal Course.—The object of this course is to train students to teach cooking and to prepare them for work as matrons. Two years.—Much practice in plain cooking: experiments showing underlying principles in cooking cereals, eggs, milk, meats, vegetables, and flour mixtures; special study of starch, albumen, gelatine, yeast, baking powder, soda; planning of meals; preparation and serving of meals; table laying and waiting; observation and practical work in kitchens and dining-rooms of the school; canning of fruit; practise teaching; making out courses in cooking.

SEWING.—With a view to making the course in sewing as practical as possible a study is made of girls' clothing on the evenings preceding their work-days.

Junior Year.—Two periods a week to each class. The object of this work is to give each pupil a thorough knowledge of the stitches used in plain sewing, basting, running, overcasting, back stitching, overhanding, hemming, felling, blind-stitching, cross-stitching. Each student makes for herself a book containing samples of the different kinds of work.

Middle Year.—Continuation of the work of the Junior Year. Each student cuts and makes herself a full set of underclothing.

Mattress Making

Senior Year.—The object of the Senior course in sewing is to enable each young woman graduating from Hampton to draft, cut and make her own dresses.

DRAFTING.—Drafting and cutting of skirts and waists.

DRESSMAKING.—Making models of dresses which afford practise in designing, putting together, and finishing lined suits. Each girl makes a wash dress for herself.

WEAVING.—Old-fashioned hand looms are made in the Trade School and are used by the girls in making carpet rugs, portieres, and

lounge-covers. The students are taught to use native rather than aniline dyes.

BASKETRY—A course is given in the making of baskets of raffia, rattan, cane and other materials. The students are encouraged to make their own designs, and it is hoped to produce eventually a distinctive Hampton basket.

LACE MAKING (*For Indian girls only.*)—A course in pillow lace making is given to the Indian girls in order to furnish them with a productive industry that will be useful to them after their return to their homes.

Chair Mending.

INDIAN POTTERY (*For Indian girls only.*)—A course of instruction in the making of Cherokee pottery is given to the Indians by a Cherokee Indian graduate. It is hoped to gradually develop other courses in the native Indian industries.

UPHOLSTERING AND CANING.—Lessons are given in mattress-making, the caning of chairs and other branches of upholstery, for the purpose of enabling the students to make or repair various articles of household furniture.

Household Handicrafts.—These include simple carpentry, glazing, white-washing, painting and papering.

The object of this course is to make it possible for girls to do ordinary repairing, to keep their homes clean and attractive, and to develop what a New Englander would define as "gumption."

All girls are given a three years' course in Agriculture which includes nature-study, gardening, dairying and animal industry. Hampton feels that the importance of agriculture for girls as well as for boys cannot be too strongly emphasized. A large part of the care of the dairy, the breeding of poultry, the raising of vegetables and small fruits, and the making of gardens should be the work of the women.

Student's Bedroom.

TRADE COURSES.

The Trade School offers courses in Carpentry, Cabinet making, Harness making, Painting, Wheelwrighting, Blacksmithing, Machine work, Tailoring, Bricklaying, Shoemaking, Steam Engineering, Tinsmithing.

The advantage of entering the Trade School is that one can take up a trade by logical and systematic steps from beginning to end. Each department is free to teach fundamental principles, by the careful application of which to commercial work, and by constant drill in the use of tools, it is believed the student has a far better chance of well-rounded training than under the apprenticeship system.

In addition to the above there is large opportunity for experience in the various productive industries on the school grounds. These industries are directly under the control of the Institute and are open to the Trade School students, who are expected, as a part of their respective courses, to spend in them a portion of their time. The Trade

School, through the munificence of friends, has one of the best equipments of tools and appliances to be found in the country, and tries to carry out Hampton's underlying thought of providing such an education as will be a help not only to the individual, but through him to his race.

Every Trade School student is required to devote nine hours a day to his trade and two hours to recitations in the night school.

Each Trade School course is three years, a portion of which may be spent in some of the outside industries. The following lines are taken up:—1st, actual work at the bench: 2nd, instruction in the

In the Printing Office.

kinds, grades and prices of materials used; 3rd, mechanical drawing which, as far as possible, bears on each trade; 4th, drill in competitive labor.

In addition to the courses offered in the Trade School, apprentices are taken in Printing and Upholstering. The Printing office does a large out-side job-printing business in addition to all the printing required in the Institute, the "Southern Workman," a 60-page monthly connected by the Institute, as well as two smaller monthlies, one on Nature-study and the other on Indian work.

PRODUCTIVE INDUSTRIES.

These are conducted as business enterprises, and are open to students who have passed a year in the Trade School. They show how productive industries are managed, and how to practically apply principles taught in the Trade School. Students can here earn wages, or work for credit to enter the Day or Trade School. In addition to most of the trades named above, there is a large and well-equipped saw-mill and the lumber yard, planing-mill, and carpenter and cabinet

shops known as the "Huntington Industrial Works," the gift of the late C. P. Huntington, of New York, whose widow has recently given $100,000 for the new library.

In all the trades *instruction* is made a prominent feature, and only so much of "productive industry" is allowed as will help the students to gain a practical knowledge of their trades.

The "Clinic" has been introduced into the various departments, and it is not unusual to see a body of students discussing the best

Class in Bricklaying.

methods of "operating" upon a broken carriage or piece of furniture. The principal reports that the "work habit" is gaining ground at Hampton.

PHYSICS.

"Everything must be as concrete as possible here," remarked the teacher. Therefore the work is mostly quantitative, and consists of exercises performed in the physical laboratory by the student and carefully recorded in a note book.

The students are encouraged to apply the principles studied, to the various trades pursued at Hampton Institute, and it is the design of the course to stimulate interest and original thought in the trades.

The following examination questions will indicate the character of the work in this department :—

Mechanics.—Does water have any more lifting effect on wood than on stone? Why? How could you tell whether there was much metal (iron, etc.) in a specimen of ore? Why are fisheries always found on "banks"?

Light.—How would you measure the candle power of a light? (two methods). How is light bought and sold? Could a photograph be taken through a key-hole of a door? How is it possible to see around a corner? Explain the popular fallacy "that the sun draws water." The eye is a lens; are the pictures on the retina erect or inverted? Is water as deep as it looks, or deeper?

A BUSY LITTLE WORLD.

"Just as far as possible Hampton is made a miniature world, where the young people learn to deal with problems similar to those that they will meet later in the outside world." Thus writes Principal Frizell in his annual report. He adds that supplemental work in the

The Shoe Shop.

various trades has been made more and more a part of each boy's course. This year's finishing class in carpentry has taken for half the year one half day each at bricklaying, painting and tin-smithing, four hours at wood turning, and 6 hours at designing small houses and estimating the material for them. The balance of the time each week has been spent at the carpenter's bench. Two of the carpenters built an oak screen, 13 feet long by 17 feet high, which was sent to the Pan American Exposition.

During last year the shoe department made 385 pairs of shoes; the harness department, 56 sets of harness; the bricklayers laid 450,000 brick in Cleveland Hall (one of the Institute buildings); also rebuilt a stack at the mill, and attended to all the repairs of brickwork and plastering on the grounds. The machine department cut 179 gear, machined 700 trucks, and did considerable work for the Electric Power and Lighting Co. in Hampton, besides building a 6 hp. vertical engine. The wood-working-machine shop built and sold 727 trucks. The tailor shop made 302 uniform suits. In some cases work has been given out to a student by contract, and he in turn employed other students, thus gaining a practical knowledge of business. In the steam-engineering department the young men, in addition to the experience of running the various engines on the grounds, helped put the steam pipes into the new building, and also helped in all the general repairs on the place.

"In all these departments," says Dr. Frizell, "and in others not mentioned, a regular course in technical training is given to the students, which is as systematic as their work in arithmetic or algebra, progressing from easier to more difficult problems. Mechanical drawing is given to all the students in the Trade School. By all this work there has been developed a spirit of co-operation and community life which will do much to make our boys good citizens when they leave school."

NATURE LESSONS AND AGRICULTURE.

In the Junior grade the pupils are introduced to a knowledge of plant and animal life. In the Middle grade, instruction is given in drainage, rotation of crops, and plant-propagation, with observation and experiment in the field. The Middle girls are being taught dairying, gardening and the care of poultry and other stock. In the Senior year, lessons are given in animal industry and nature study as applied to the farm. The Normal class and the Whittier teachers are also instructed along these lines, and a lecture on some agricultural topic is given once a month before the County Teachers' Association.

The assignment of individual garden plots to the Whittier children has not only created a love for working in the soil, but has developed ideas of possession and production, at the same time that it has cultivated in the pupils co-operation, order and system. The new brooder house now being erected will provide object lessons in the study of the best varieties of poultry. There is good prospect for improved dairying and poultry raising in the South, and the Hampton young people will lead in these lines of industry. To show what excellent opportunities they have for gaining a knowledge of practical farming, they have made this year 3,503 pounds of butter. On the school's two

farms there are 32 horses, mules and colts, 256 cows and young stock, 575 fowls, and 7 incubators, all cared for by students. A small farm of 4 acres, with barn and silo, managed by a student, shows how a family can be supported on a small piece of ground. The experiment station gives instruction in improved methods of agriculture.

Mr. Charles L. Goodrich, the able instructor in Agriculture, has strong ideas on the importance of teaching it in every school outside the large cities. He says:—

"The term Nature Study is simply a new name for the study of elementary science, indicating a change in methods of teaching, rather than a change in subject matter. Under the new method the child learns facts through personal contact and experience with nature. The

Class Studying Formation of Soils in a Swamp.
(Mr. Goodrich in extreme left.)

purpose of this method is to broaden the pupil's knowledge, obtained by pleasing and interesting experience, to arouse in him a love for the beautiful in nature and for country life. The work should not stop here; the pupil should be taught facts that are of practical use in every-day farm life and he should be taught how to make use of them. That is all that the teaching of agriculture involves. Without these practical lessons I believe that nature teaching is deprived of half of its power."*

The signs of the times indicate, Mr. Goodrich thinks, the general teaching of agricultural science in the near future, because nature-study teaching—the forerunner of agriculture teaching—is widely engrossing the attention of the teaching world. He points out that educators are

* "Nature Lessons for School and Farm" by Chas. L. Goodrich, Hampton, Va. Institute Press, 1901. A 48 page book that would be of great value to any rural teacher, and that could be had for about 25cts. post free.

in error in supposing that this is now being done in agricultural colleges for in 1898 1899 only 4,181 students in all the agricultural colleges of the United States were studying agriculture.' Many educators, he says, who are friends of nature teaching, oppose instruction in agriculture, claiming that the teaching of "practical things" bores the pupils and defeats the object of nature teaching Mr. Goodrich prefers rather to emphasize the practical side of nature study — the side too often neglected—and to show how agricultural lessons of great value may be taught in a simple way.

Experimenting with Plants and Soils.

An aggregate of five months during fall and spring are devoted to introducing the pupils at Hampton to Plant life, Soils, and Insect Life. The following is a brief detail of the topics studied:—

Plant Life.—Principal parts of plant and the use of these parts to man; how these parts grow and what they do for the plant; conditions necessary for each part to make its best growth and to do its best work for the plant and for man; how to bring about these conditions on the farm

Effect of Organic Matter on Plant Growth.

Soils.—Relation of soil to plants; sand, clay, humus; how soils are made; work of sun, water, ice, air, plants, and earthworms in making soils; soil conditions which affect plant growth: relation of soil to water, heat and air: plant food in the soil: how to bring about and maintain soil conditions which favor plant growth.

Insect Life.—General structure, metamorphosis, and habits are studied in grasshoppers, squash bugs, beetles, flies, moths, and butterflies; the habits of other insects common on the farm are studied as they are found during field excursions.

These three divisions of the subject are not taught as separate and distinct topics, but an attempt is made to impress the student with the close relations existing between them, and the interdependence of each on the others. The work is conducted by observation and experiment in field and class-room, by written exercises, and by discussions.

A STUDENT'S SPEECH.

No better illustration of Mr. Goodrich's teaching or methods could be had than by quoting from a speech delivered by a Hampton student (aged about 19) at the Anniversary Exercises which I attended on April 23rd, 1902. This speech, I may say, was delivered without reference to a note, and given in a clear tone and with faultless enunciation before two thousand people. The speaker, the subject matter, and the style were all suggestive of the "Hampton idea." I quote extracts only:—

"Since the masses of my people are engaged in farming of some kind it is of great importance that we understand how to farm intelligently and successfully.

"The average farmer finds it difficult to earn the plainest living, and in most cases it is because he does not understand the conditions his crops need to develop into large, strong plants which will yield much fruit. Farming that brings with the year's end no recompense for toil but rather continued poverty will drive the farmer to any place that appears to offer better things; and as the city seems to be his refuge, it is not to be wondered at that we see farms deserted and cities crowded. The farmers say that the district school does not fit his children for usefulness on his farm, but rather takes them from it, and usually about the time they are large enough to help make the farm pay. So the question comes: Can the training in the public schools be made more useful to the farmer and his children?

"Mr. Goodrich says: 'Give to the farmer's children *practical* nature study and gardening, teaching through these subjects lesssons which will be valuable on the farm.' I shall attempt to illustrate some of the ways by which Hampton is trying to bring this about. In the spring of the year, about the time for planting, this question should come to the farmer: What are the conditions necessary for the germination of my seeds? At the Whittier, our training school, the children who receive nature study and gardening, answer the question by following these directions:

"Soak two lots of seeds twenty-four hours and two hours respectively; dry with cloth; put in two bottles; cork tight; set aside and watch from time to time. It will be seen that the seeds soaked twenty-four hours have sprouted while those soaked two hours did not. Why? Because the first ones received sufficient moisture while the second ones did not.

To Show that Seeds need Moisture and Air.

"Plant seeds in two tumblers; give one high temperature and the other low; watch from time to time and keep soil moist. It will be seen that the seeds given high temperature sprouted while those given low did not. Why? Because the first got sufficient heat while the others did not.

"Soak seeds twenty-four hours, dry with cloths; put a few in one bottle, and fill the other about half full, cork tight; and watch from time to time. It will be seen that the few in one bottle sprouted while those in the bottle half full did not. Why? (introduce lighted match into each bottle; match goes out). Why did the match go out? Because the fresh air has been replaced with foul air, or the oxygen has been replaced with carbon di-oxide by the seeds. The bottle with the few seeds contained enough fresh air to sprout them while the other with many seeds did not. In the same

To Show that Seeds need Air.

way seeds will sprout in sand, which admits sufficient air for the purpose, while they will not sprout in puddled clay.

"Thus the question is answered and the children learn the lesson that seeds must have sufficient *moisture*, sufficient *heat*, and sufficient *air* to permit germination. From the class-room the children go into the school garden, and each puts into practice in his bed these and other lessons learned. In the garden they also learn the use of the hoe rake, and spade; how to prepare the soil for their seeds; how to plant the seeds, how to care for the plants as they grow, both vegetable and ornamental; what kind of cultivation is necessary before and just after a rain; how to make soil mulch in order to check evap-

Home Built by Hampton Boys at Oneida.

oration of moisture, etc. This is the class of work being done at the Whittier.

"What would it mean to the farmer if his children received such training in every district school? Why, his children would carry these lessons into the home on the farm, and put into practice the teaching received in the school-room and garden. They would help him to revolutionize his poor method of farming. They would show him how to plow deep instead of scratching the surface of the soil, how to break well, and how to prepare a good mellow soil for his seeds. If some of his land was too close to admit sufficient air, or too open to hold sufficient moisture for plant growth, they would show him how to work organic matter into these soils by applying stable manures, and by growing cow-pea, clover and other manurial crops to turn under, and by thus changing the texture of the once worthless

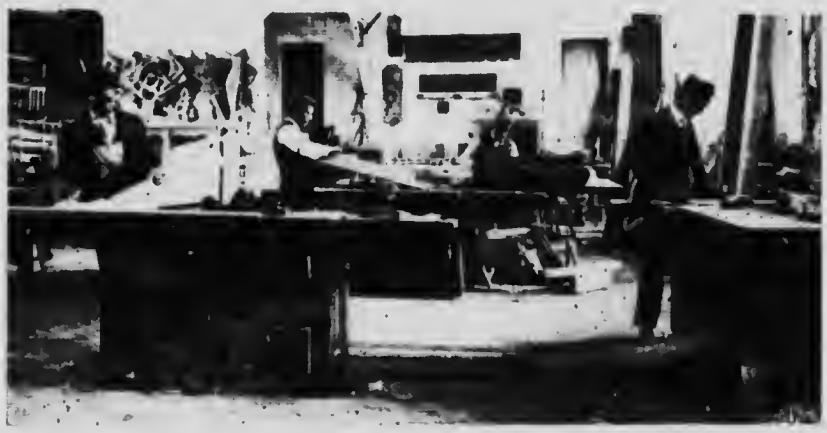
soils, bring about the conditions necessary for the germination of seeds and growth of plants."

"The negro farmer works hard, but it is too much in a mechanical way. His methods of farming must be changed from mechanical to scientific. And what is scientific farming save obeying the laws of nature? So he must learn the secret of working with nature if he would succeed.

"Through Hampton this work is being already introduced into some of the schools of Virginia, and I believe the time will soon come when this kind of training will be in most of the public schools of the South."

DOMESTIC SCIENCE.

General Armstrong the founder of Hampton Institute, rightly said "Our work is never secure till it terminates in family life, which is the unit



Wood-Working Trade Department.

of Christian civilization." With this thought in view they have now three courses of cooking — a very elementary one in home cooking for girls who are not likely to get on very far in the school; a more advanced course for the middle girls, and a normal course for those post graduate students who intend to become teachers of cooking. Besides the regular routine in the class-room, the girls are taught the care of the dining-room, and are trained to set a table properly and to wait on table. In order to give a practical turn to the work one dinner a week is cooked and served at 6 p. m., three girls in turn being responsible for the dinner, one of them acting as waitress. One breakfast a week is served at 7 a. m. This is a family breakfast and the eldest daughter is supposed to be ready to jump up from the table and wait on the others.

The normal class in cooking has a short simple course in chemistry, one in the theory and art of teaching cooking, and another in practice teaching.

The sewing class is one of the most popular on the place. The students show real enthusiasm and a spirit of co-operation and loyalty which is most hopeful. A small productive dressmaking department has been started. Some work has already been done for the townspeople.

In addition to the regular sewing courses, classes in basketry and lace making have been introduced the present year. The head of the department considers that, as a training for hand and eye, basketry is in some respects superior to sewing, because inaccuracy or solvenly work can be detected immediately; the lace work is also most important in helping to teach accuracy and patient carefulness.

INTERESTING ACADEMIC WORK.

"The academic work is broader and stronger and in closer touch with life and with the other departments of the school than ever

Primary Class in Linear Measure.

before" reports the Principal. "In our study of language we are teaching our students to do something, then to talk and write about it, and finally to read about it. In the regular course no books are used for the first three months except for reference. In the laboratories the young people make experiments in order to learn about water, air, the soil and plants. These are followed by conversations and written exercises upon what they have seen and done. The study of mathematics is of the same practical character. Each student keeps a cash book showing what the school owes him for work, what he owes the school for board, etc. Each month the student has a account rendered him by the treasurer's office. These two statements should agree; if they do not, means are taken to discover on which

side the error lies. Articles are manufactured by students, and the cost in material, time, etc., is computed. Surveying operations are carried on. Bills and memoranda concerning transactions on the farm, in the commissary and kitchens, are sent in for the classes to put into proper shape. Figures are made to *live*.

"In our geography department we are emphasizing physiography and industries. A study of current events is still the basis of a large part of our geography course. Some of the most valuable and interesting work is done in connection with the daily news items. As Professor Dewey says, 'The significance of geography is that it pre-

A Practice Lesson in Arithmetic

sents the earth as the enduring home of the occupations of man. The school's varied industries are made, so far as possible, active centers of scientific insight into natural materials and processes, points of departure whence pupils may be led into a realization of the historic development of man.' The cooking, sewing, agriculture and shop work are thus made to contribute to the understanding of geography and history.

"Our teaching of the natural sciences begins with the direct observation of nature, the study of trees and animals, and the gathering and classifying of specimens. Much emphasis is placed upon the teaching of practical physics and chemistry, without which our agriculture, mechanical work and geography would be most superficial.

"Prominence is given to drawing, not only mechanical but freehand drawing. The lower classes begin with brush work, making cards and book covers. Color work is taken up later, also simple lessons in freehand perspective, and the drawing of picture frames and window boxes made in the shops. Original designs are also made from plants and other objects in nature.

"It is clear that the students are more thoroughly interested in the school's work than ever before. The devoted labor that is put upon them in class-room and workshops is certainly having its effect. The value of a careful selection of student material, both Negro and Indian, is becoming apparent. Although we have a large school, composed of both sexes, very little punishment is necessary. If some of our pessimistic friends could see the inside life of the young people of the school it would be a revelation to them. Not only is there almost no violation of the moral law, but there is an absence of low talk and impure thought, that would seem to be well-nigh incredible. It is utterly impossible for those of us who have for many years come into contact with these strong, fine characters to entertain the dark views as to the future of these two races that have been presented in some recent books and magazines."

THEORY APPLIED TO PRACTICE.

On the blackboards all about one of the rooms I found a series of drawings illustrating Geometry as applied to various occupations, as follows:—

Wood-turning.—Cone and frustrum, newel cap.

Tinsmithing.—Elliptical pipe meeting a round pipe at other than right angle.

Machinists.—V thread. Square thread.

Bricklaying.—Doorway of brick building. Archway.

Carpentering.—Plan of roof of two pitches, showing development and bevel of rafters. Stair building.

Manual Training.—Pattern making. Mosaic with beveled border.

Tailoring.—Outline of coat measure.

Harnessmaking.—Pattern for breeching.

Dressmaking.—Pattern for dress, drawings showing outline.

Following out the method of working from the concrete to the abstract, Hampton students "absorb" arithmetic by measuring the school furniture and grounds; science by making apparatus and testing it; agriculture by working in the soil; mechanics and physics by work in manual training and the various industries.

The manual training teacher told me that a year is saved in arithmetic by co-ordinating this study with manual training in a wise way.

PHYSICS CORRELATED TO MANUAL TRAINING. MAKING AND REPAIRING TELEPHONES.

THE INDIAN ELEMENT.

"The co-education of the Negro and Indian races has certainly proved successful. While the Indians have their separate quarters and tables in the dining-room, they mingle freely with the colored students in the shops and school rooms. As the western schools have improved we have been able to secure more advanced students, and to place them in the same classes with the colored students, thus doing away with a separate Indian department

Old Time Dakota Home.

While the Negroes have certain advantages, especially in the knowledge of English, they are not so far in advance as to cause the Indians discouragement.

"The Indian needs constant and systematic training of the hand in order to establish the work habit, while the amount of academic training given in the night school is sufficient to round him out into more complete manhood.* Five Indian boys have been sent this year to the Hemenway Farm in order that they might get thorough training in farm life. Indians have also done much of the milking of the herd on the home farm. The reports from the Trade School and the Domestic Science department indicate a real advance on the part of the Indian boys and girls.

* An interesting item is published in the Toronto papers just as these proofs are finally passing from my hands to the printer. It tells of Dr. Oronhyatekha, our famous and clever Canadian Mohawk Indian, building a "Castle" on Forester's Island, near Deseronto. "He flung himself into the work with his wonted energy, cleared the foundations, drove the first nail, drew up the plans, enlarged them as the work proceeded, in a word, was architect, contractor, overseer and workman combined. The work began on April 26, and the work was half completed when the annual excursion was held last year." The description of this three-story building shows it is magnificent in design and execution. No better testimony could be furnished to the value of industrial training, which the Doctor enjoyed when a student at the New England Company's School.—T. B.

"Having two races at Hampton makes the work in some respects more complex, but at the same time it gives the school a broader outlook on the race problems than it would otherwise have. Our record of returned students continues to be satisfactory. Each year increases the number of those who have enjoyed the privileges of the school, and makes it possible for them to hold their own easily against old traditions and customs." Thus writes the Principal.

EDUCATION IN THE SOUTH.

The Southern Industrial Classes for cooking and sewing, together with the mothers' meetings, so admirably conducted with the support of the Slater Board, under the general direction of Hampton's princi-

Hampton Students' Home in Dakota.

pal have this year increased in usefulness and efficiency. The public press of Norfolk, Va., is beginning to demand the introduction of similar work into all the public schools of the city, both white and colored.

DAILY "TOPICS."

One of the most interesting and profitable features at Hampton is the discussion every morning of the topics of the day as gleaned from newspapers and magazines. The young people, under the guidance of a wise teacher, discuss the world's affairs, each one in turn adding his or her contribution of fact or theory. This not only ensures accurate and ready speech—any slips of the tongue being corrected in a kindly

way by the teacher—but also instils habits of observation and thought, as well as liberality of view, which are most helpful. The following is a specimen of the "day's news" as summarized for class-work, and written out by the students, and printed by them on a cyclostyle:—

"NEWS, FRIDAY, MAY 9TH, 1902.

"*Congress*: A sensational incide t occurred in the Senate Wednesday in connection with the Philippine debate. Senator Tillman, replying to Senator Lodge's defence of the government's Philippine policy, brought in the color question in the South, which he discussed with characteristic vigor and recklessness. Every Democratic Senator except Senator Teller left the Chamber as a rebuke to Mr. Tillman's violent language. The Democrats propose to urge the sending of a committee to the Islands to investigate conditions there.

Class in Plastering.

"*South Africa*: Lord Salisbury, in a public address a few days ago, spoke much more hopefully than formerly of the South African war and its outcome. He said that Great Britain had not receded one inch from her former position, and that British prestige had been maintained in South Africa. The town of O'Keip in N.W. Cape Colony, which has been besieged by the Boers since April 4, has been relieved by a British force. Gen. Lucas Meyer, commandant of the Orange River forces, cables his wife in this country that peace is likely to come about soon.

"*San Domingo*: The Dominican capital capitulated yesterday to the revolutionary forces under Vice-Pres. Horatio Vasquez. President Jiminez, as reported, sought refuge in the French consulate, and many government officers obtained shelter in the French and United States legations. Puerto Plala has also surrendered. Cable despatch states

that Pres. Jiminez has signed a paper relinquishing his claims to the Presidency.

"*China*: The French bishop in China has received information that a force of 10,000 armed rebels are participating in the revolt in Chang-ting-Foo, North China. The leader of the uprising is a military mandarin, who killed his family before raising the flag of revolt, so as to prevent their punishment in the case of his failure.

"*Various Items*: Bishop Potter fainted while making an address at a boys' school in New York city, and was taken home in a carriage. He is ill at the present time, from overwork, his physicians say.—The United Mine Workers' committee reached no decision Wednesday night—The report that American sailors from the Chicago were arrested in Trieste proved to be false.—Dr. Schurman declines to serve on the

Hampton Students Building a Town House Under Contract.

Philippine investigating committee.—Senator Hoar introduces a new canal bill, authorizing the President to decide on canal route and to expend $180,000,000."

A SUGGESTIVE DEBATE.

One of the features of the Anniversary Celebration was a debate on the question: "Resolved, that the vocations taught at Hampton can be pursued to better advantages in the country than in the city."

The affirmative speakers chose as their occupations—farming, blacksmithing, carpentry, teaching; while the negative side elected business, bricklaying, concreting, tailoring.

I was much interested, not only in the speaking, which was clear and pointed, but even more in tracing the influence of the "Hampton idea" in the aspirations and ideals of these young negroes. The

speaker who extolled the profession of teaching (and he was a boy) summed up the whole case for Hampton in these suggestive words:—

"A teacher is not some one who goes into a class room and teaches what is in books. No; a Hampton student who is a teacher is one who, going into a class-room without desks, will make for herself* something to serve her as desks until she can get something better. She will show her children how to keep a clean room, and will teach them to be prompt at school, as well as to read and write. You will find her teaching her children to obey the laws of the land. With her model garden and simple nature lessons she is training up a generation of young farmers. Take the best preacher that has ever been produced, and can he do this community the good that this teacher can, who knows the people? The teacher is the foundation of the preacher himself."

After contrasting the usefulness of the teacher with that of the lawyer, much to the latter's disadvantage, the speaker proceeded: "Show him (the schoolboy) how to play instead of fight, and when he gets to be a man he needs no lawyer to convict him! To whom does the statesman owe his ability to use his language? Teaching is at the foundation of every thing that requires any intelligence!"

The foregoing outline of the Hampton methods, and the illustrations which put them in concrete form, may suggest to our Canadian teachers and school boards some improvements in present methods.

I trust that what I have written may lead to the introduction of at least some of the Hampton methods, as well as those of the Public Industrial Art School, to the great advantage of our young people, and, through them, of our common country.—T.B.

* Note that all Hampton students expect females to be adept in the use of tools!