

The Educational Review.

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OUR PROSPECTS.

To THIS issue of the REVIEW four extra pages are added, making in all twenty-eight pages. This enlargement is made for a double reason: to accommodate our advertisers, who refuse just yet to be confined to the limit of four pages; and to make room for the article on "Thinking in Shape and Pictorial Teaching," by the Rev. Edward Thring, of England, to which Mr. Parkin has contributed an introduction. The marked attention this address has received on both sides of the Atlantic justify us in re-publishing it in full, as one of the most valuable contributions to educational literature that has appeared in recent years.

The strong financial support which has been already extended to the REVIEW, the many flattering expressions of approval with which the first issue has been greeted, are most gratifying, and assure its per-

manence. We should like to publish some of the complimentary notices of the press, and the letters from friends throughout the Atlantic Provinces, as well as from western Canada and the United States, cordially welcoming the REVIEW, but at present there are too many demands on our space to yield to the temptation. We take this opportunity to thank our friends for what they have said and done in appreciation of our efforts to establish a first-class educational journal. The Educational Institute of New Brunswick, at its recent meeting, determined that the publication should not be strangled in infancy. A resolution was passed cordially endorsing the paper, and recommending it to the teachers of the Province; it was greeted with warm words of encouragement, and its members promptly supplied the sinews of war to tide the paper over a critical period in its growth. We are assured that the Educational Association of Nova Scotia, which meets at Truro this week, will greet it in the same tangible way, and that other educational institutes, local and general, will extend to it an encouraging hand.

We believe that this substantial recognition of the REVIEW springs from a sympathy with the objects which it has in view: Criticism of worn out or exploded educational theories; newer and more advanced methods of teaching; a fair and impartial examination of the administration of our educational systems; a plea for the adoption of a system of industrial education; better and fresher methods of teaching the subjects of natural science required in the public schools; and in a multitude of ways to assist the teacher and make the REVIEW a power in the school-room. "Your article No. 1, of the Ferndale School Series, was worth the price of a year's subscription," says an enthusiastic friend. "Your article on Industrial Education struck a note that should resound throughout the length and breadth of these Provinces," says another. The editors of the REVIEW are practical teachers. They are earnest in their calling, and have chosen it for their life work. With the assistance and co-operation of zealous and experienced teachers they hope to make the paper a power in our educational progress.

VICTORIA SCHOOL OF ART AND DESIGN.

Halifax city is commemorating the Queen's Jubilee in the permanent, as well as the evanescent fashion. A school of art and design has not only been proposed, but is already far on in the way of successful realization. The people have subscribed, at the time of writing, \$4,000; the city council have granted \$3,000 of the Jubilee funds, as an endowment; and the Provincial government have voted \$800 a year. While Halifax city will realize more immediately and fully the benefits of such an institution, the Province as a whole will ultimately be benefited. It is, therefore, justifiably expected that the intelligent public throughout the country will assist in raising the total endowment to at least \$22,000, the amount which the committee reports as a minimum for a satisfactory financial basis.

Foremost in the advocacy of this school, was Mrs. Leonowens, of Halifax. She has addressed a very effective letter on the subject to the teachers of Nova Scotia. We would extend the appeal to the patrons of education especially. The teachers, with the exception of a few of the most hardy, must, in commercial language, endeavor to supply the demand. If the demand be for an education which will best fit the citizen to make use of all the material nature has placed at his hand, that education will be given. This material is more varied and abundant than the patrons of our old systems of instruction seem to have imagined. For instance, it exists not only in the potentiality of the human hand to illuminate a ledger with script, in lines of beauty, but in the less developed powers of limning new creations in decorative, of representing mechanical constructions, or of executing industrial manipulations which may multiply the value of the raw products of our country hundreds of times, and convert a village of miners into a metropolis of manufacture and wealth. Are we going to be simply diggers of coal, and purveyors of fish for the nations, or are we to rise to the level of our manhood and be master-workmen ourselves. Ignorance of the vast possibilities of a system of education lies at the root of our indifference. Only let our business men of every class and grade know what can be effected by a proper direction of the energies latent in the youth of a single generation, and they will arise in their might and demand reform. We have in our mind, of course, a wider spreading extent of reform than that alluded to in connection with this department. The chairman and secretary of the school have issued a circular, in which they give some strong points of information to the public. They note that such schools were first started in English-

speaking countries, through the efforts of the late Prince Consort; that they were originated in consequence of the striking inferiority of English manufactures, in skill and taste, as shown at the exhibition of 1851; that their utility has been such that 400 such schools exist at present in England; that, according to a German authority, since that time England made more rapid progress in industrial art than any European country; and, in fact, that there can be no supremacy in general manufacture, without a corresponding superiority in technical education, of which industrial drawing is the corner stone. This is the reason why drawing is made one of the subjects in the provincial course of study for our schools. But our teachers—how have they been taught? The Victoria School of Art and Design, combined with the instruction faithfully given in the Normal school, and in other institutions, will soon, we hope, supply our schools with teachers trained in the elements of industrial art. And to accelerate a consummation so devoutly to be wished, we trust the educational authorities may, by next year, add drawing to the syllabus of examination for every teacher's diploma. We congratulate Halifax on the intelligent position it has taken, on the success it has already attained, and trust that its spirit of progress may be communicated to the whole country, and be reinforced in communication.

N. B. EDUCATIONAL INSTITUTE.

The tenth annual meeting of the Educational Institute of New Brunswick opened in St. John on the 28th of June, and its sessions were continued during the two following days. The attendance of teachers was large, and nearly all sections of the Province were represented. Chief Superintendent Crocket presided, and beside him on the platform, at many of the sessions of the Institute, were representative educationists of the Province: President Harrison and Dr. Bailey, of the New Brunswick University; President Inch, and Prof. Burwash, of Mount Allison University; with Hon. Senator Boyd, chairman of the Board of School Trustees of St. John, and others.

The proceedings generally were of a harmonious character; the papers thoughtful and suggestive; and the discussions of a very practical character. An interesting feature was the part taken by the ladies in the reading of papers and discussions. A little time was wasted by the Institute in rambling discussions, but the general desire seemed to be to carry out the programme with spirit and promptitude. It is a mistake, however, to provide too long a programme

for such a gathering. Much benefit is derived from the discussion of papers, where important and practical suggestions may be brought out. Again, the propriety of crowding three sessions in one day, occupying some nine or ten hours, is questionable. Papers and discussions, containing much that is valuable, are lost, often because they fall upon listless ears, made so through sheer weariness. Let there be a reform in this respect. One important purpose of these Institutes—pleasant reunions of old friends, and the forming of new acquaintances—is not available if the time between nine in the morning and ten at night, is chiefly occupied in breathless attempts to read as many papers as possible.

The public meeting, held in the evening of the day on which the Institute opened, was largely attended, and the proceedings of an exceedingly pleasant character. The speakers were, His Honor, Lt. Governor Tilley, who gave an interesting retrospect of education in New Brunswick, especially in the cities of St. John and Portland, during the past fifty years. Dr. Stockton, M. P. P., made a strong plea for industrial education. Rev. L. G. MacNeill thought there should be more depth and height, and less breadth, in what is taught in our schools. Dr. Inch, of Mt. Allison, saw many hopeful signs of educational progress, not the least of which was the starting of an educational journal one year ago, which had developed into a periodical for the Maritime Provinces. Other speakers were, Dr. I. Allen Jack, Dr. Harrison, and Hon. Senator Boyd.

Wednesday morning's session was taken up with a somewhat vigorous discussion on the change of school terms in this Province, which seems to find very little favor among teachers. On Wednesday afternoon, Inspector Mersereau read a paper on School Inspection, its Place and Importance, in which he showed the value of co-operation and sympathy, between inspector and teacher. Mr. Jas. Barry introduced the subject, Teaching English in Schools, which clearly pointed out some of the faults of instruction in this subject, and gave some excellent suggestions how to remedy these defects. Miss Grace Murphy, of Portland, followed with an admirable paper on the same subject. One of the most interesting papers read at the Institute, was that by Miss Grace Orr, of the Victoria School, St. John, on Domestic Economy in Schools, which was illustrated by specimens of needle work from the lowest to the highest grades. The paper was valuable, as illustrating the practical work that is done in this school, and from the interesting manner in which the subject was dealt with. Good results should follow. On Wednesday evening Principal Mullin and Mr. John March gave an interesting

account of the New Brunswick exhibit in London, last year. Mr. Geo. R. Parkin followed, giving his impressions of some aspects of education in England, which he had ample opportunity of observing.

On Thursday morning Chief Supt. Crocket read a valuable paper on School Sanitation, in which many important hints on ventilation, and the care of the health and eyesight of pupils, were given. At the afternoon session a practical and very suggestive paper on Scientific Instruction in Schools, was read by Mr. John Brittain, of Petitcodiac, which was ordered to be published in the EDUCATIONAL REVIEW. This was followed by an address by Dr. Bailey, on the same subject. Prof. Burwash read an excellent paper on the Principles of Good Reading, which were illustrated by many examples.

The committees appointed to revise the courses of instruction for Grammar and Superior schools, respectively, reported, recommending several changes in the courses. These revised courses were ordered to be published in the EDUCATIONAL REVIEW, in order that the changes proposed may come fully under the notice of teachers, prior to their discussion at the Institute next year.

The following were elected members of the executive committee: S. C. Wilbur, G. R. Parkin, P. Cox, W. B. Jonah, J. M. Palmer, F. H. Hayes, H. V. B. Brydges, J. S. Harrison, P. G. McFarlane, and S. A. McLeod.

A very enjoyable conversazione was held at the close of the Institute, presided over by Senator Boyd. Ice cream was served. Music, readings, and recitations made up the remainder of the programme, which was a very enjoyable one.

ITS SEEMS to us, that amid all the advance in education, we should not lose sight of the fact that a sound and thorough training in the three R.'s is indispensable. To teach pupils to read with distinct utterance and a proper inflection, with a competent knowledge of the words used; to teach them to write plainly; and to teach them to add correctly and rapidly, columns of figures, with an accurate knowledge of vulgar and decimal fractions, proportion, interest, and discount, is of the very first importance. A pupil thus equipped at the age of 14 or 15 has a good start in the world. The state makes provision for such training; it pays for it; it has a right to expect that a thorough foundation in these practical subjects shall be secured. If a boy or girl has a smattering of many things, without these few things learned well, the state has not got its rights.

N. S. EDUCATIONAL ASSOCIATION.

The eighth annual convention of the Provincial Educational Association, of Nova Scotia, meets in Truro on the 13th and 14th of this month. There are names on the programme which assure an interesting and valuable meeting. Eminent teachers, who have already won the recognition of all classes as successful men, will discuss important subjects, and at the same time unconsciously reveal some points of character and manner which contributed to their success. The yet unknown pedagogue, from some obscure section, will carefully decipher the hieroglyphics of genius thus displayed, and start to track the footsteps in the sands of time. He will throw down a mixed up case of school technics for his compeers to unravel, or perhaps measure ferules with a kindred spirit, or tilt against a windmill. Maybe he will only patiently observe, mentally criticise, and good-naturedly enjoy the wit, the wisdom, and the waggery of the scene. In any case, he leaves the convention a lighter, a wiser, and a smoother man. For some years back the attendance at this convention has been steadily increasing, so that at present the ample accommodations of the new Normal School buildings show symptoms of becoming strained. Nothing can be a surer index of the increasing interest teachers take in the intelligent exercise of a profession which each year is taking a higher place in the estimation of the people.

N. B. SUMMER SCHOOL OF SCIENCE.

The New Brunswick Summer School of Science opened at the Natural History Society's rooms in St. John on Friday morning, July 1st, and continued its sessions until Friday evening, July 8th. The attendance averaged about twenty-five, most of whom were teachers. The interest manifested in the work increased daily, and was most gratifying to those who had charge of the classes. A genuine enthusiasm was awakened in natural science studies, which must produce good results in the schools of those teachers who took advantage of the course. The short time that the school was in session of course prevented anything like thorough or extended work being done in one subject, but an interest was aroused, habits of closer observation formed, and a desire implanted in the members of the school to study intelligently *objects* of natural history. One of the pleasant features of the school was the thorough devotion to the work and the sympathy that existed between teachers and pupils. It is safe to say that the work accomplished this season will lead to the formation of a

school on a more advanced and extended scale next summer.

We regret that the demands made on our space this issue prevent the publication of a full report of the work done at the school. We may allude to some of these special features in future. Three excursions were made by the school—one to Lawlor's Lake, a second to Meogone Island, and a third to the Fern Ledges on Lancaster Beach—all within easy reach of St. John, and places of considerable interest to the student in natural science. Four days were given to laboratory work, and the eager attention given to this important department of the school showed that its value was appreciated. As far as possible, this laboratory work preceded the lectures, more especially in zoology. Six lectures were given by Mr. W. F. Ganong on this subject, in which details of structure, beginning at the lower forms and gradually proceeding to the higher, were given. In this course, Mr. Chamberlain gave instruction in the structure, habits, and classification of birds. Mr. G. F. Matthew gave a series of seven lectures on geology, beginning with modern depositions, and gradually proceeding to the earlier formations. The interesting geological features of St. John and vicinity, especially at Lawlor's Lake and the Fern Ledges, rendered these lectures and examinations of structure of great interest and value. A lecture was also delivered by Dr. Bailey on the geology of southern New Brunswick. This was given from a romantic spot on the summit of a hill in the vicinity of Lawlor's Lake—a wide extent of country on all sides, presenting illustrations from nature on a grand and beautiful scale. Mr. G. U. Hay gave a series of lectures on botany, showing the principal features of the different groups of plants from the lower forms upwards, with structure, especially of the higher forms. Specimens from five families of plants were analyzed, Mr. Brittain assisting in the laboratory work. Two evenings were devoted to astronomy, in which Mr. H. C. Creed gave lectures and directed telescopic views.

The New Brunswick Natnral History Society, which generously opened its lecture rooms and museum for the benefit of the school, showed its desire to share in educational development. The cordial address with which its president, Dr. Botsford, opened the school, indicated the work in which the Society and our educational institutions might profitably share.

It cannot be denied that the English language is shockingly spelled.—James Headley, LL. D., late professor of Greek in York College.

THE UNIVERSITY OF NEW BRUNSWICK.

To the old graduates of this University, and to all who take an interest in higher education, the last encoenia of this institution was full of instruction and encouragement. As usual, the weather was beautiful and the attendance large. The proceedings opened with the oration on behalf of the Faculty, by Prof. Stockley. It was a scholarly production, and much appreciated. The address on behalf of the Alumni Society, by Mr. W. G. Gaunce, which took place after the presentation of prizes and honor certificates, and the conferring of degrees, closed the exercises. It was full of genuine enthusiasm, and well calculated to arouse an abiding interest in the welfare of the College.

It is clear that the Professors of the University of New Brunswick are thorough in their respective departments, and need not fear comparison with men from any other higher seat of learning in Canada.

This University created a demand for useful and honorable learning, and is supplying that demand, so much so that not a few young men have come to her halls, having first earned the means by which to avail themselves of the advantages afforded, and have gone away not disappointed, having done credit to themselves, better qualified to be a credit to the Province to which they owe so much; and to assert by the attainments of the mind and heart, the just claims of their alma mater to public respect and confidence.

PRINCE OF WALES COLLEGE AND NORMAL SCHOOL.

Recent papers received from Charlottetown give an account of the closing exercises in connection with this institution of learning. The year just closed has witnessed a large increase in the number of students in attendance, and still greater efficiency in its management. The careful training which students receive within its walls is well shown in the excellence of the teachers of P. E. Island schools, who are prepared here for their work, and in the admirable way in which the students sustain the reputation of their alma mater in competitive examinations abroad. No better evidence is needed to show the substantial and thorough character of the work done. At the closing exercises there were present His Honor Lt. Governor McDonald, Hon. D. Laird, D. Montgomery, Chief Superintendent of Education, and leading citizens of Charlottetown. In reading the reports of the speeches made on the occasion, we note with considerable surprise a remark made by Rev. Mr. Frame, to the effect that it was the first time he had ever met a member of the government at a Prince of Wales College ex-

amination, though the institution belonged to the Province. One of two conclusions is irresistible: That the reverend gentleman's visits must have been of the character of those commonly ascribed to angels; or that the members of the government do not show that interest and pride in their educational institution that its high character, both at home and abroad, entitles it to receive.

SCIENCE IN THE COMMON SCHOOL.

Often young teachers are afraid to start their pupils on natural science work, because they are afraid they may be asked questions which they cannot answer. A false pride always does mischief. Nobody knows everything; and a frank avowal of ignorance on any point will not cause the loss of respect of pupils for a teacher, unless it is plainly something which he should know, or something which he does not appear to be quite frank about.

A mistake often made, is that the teacher should know the names of all the minerals, plants, and animal forms of life which a pupil may find. By no means. If the teacher knows a few typical specimens by name he is doing well. But simply knowing the name, is knowing little more than nothing about the subject. A teacher without knowing a single scientific name of the specimens to be had in a school, may do work superior to a man whose head is a cyclopædia of names.

He can do it in this way. Cause a thorough examination of every point and quality to be made; and, when names are necessary, extemporise some temporary, suggestive name or catch phrase. If it is a mineral, the point is to find out every character which can be discovered by any means at your disposal or theirs. If a plant, compare its roots, stem, system of branching, leaves, flowers and fruits with those of other plants. Then dissect them, comparing their parts with the similar parts of these plants. Draw on the board, and make the pupils draw on the board, enlarged outlines of the forms of the various parts. No matter how rudely this drawing is done, everyone should be made to do it. It will develop accurate perception, memory of form, and the power of drawing. Do the same with animal forms. And, in addition, stimulate the observation of the various phases through which the plant or the insect may pass. All this can be done without any preliminary knowledge. Begin the study with your pupils. Let them know it. Both you yourself, and they themselves, will find in such work, not only profit, but a great deal of pleasure. The mutual pleasure may be even greater than if you commenced with an extensive stock of knowledge in natural science.

FERNDALE SCHOOL.

No. 2. A BEETLE.

TEACHER. How many of you have brought specimens of the Potato Beetle and its work, for to-day's lesson, as I asked you?

ANS. (A number of hands raised.)

T. Just let me see what you have.

ANS. (A general display of potato branches from as many varieties of quaint and curious pasteboard boxes, etc.)

T. Very good! You have specimens of the beetle between you all in nearly every stage. Let me take this branch and make a sketch of it on the board, as it appears to be the most complete specimen. Here it is.

Now, looking at your specimens, can you tell me what these dots are which I am putting on the leaves near *a* in the sketch?

SCHOLAR. Eggs, I suppose.

T. And they are placed on the—

CHORUS. Under side of the leaf.

T. Or on the—

SOME VOICES. Midrib.

T. Or on the—

A VOICE. The stem.

T. Very good. What is the color?

CHORUS. Orange.

T. How many in each cluster?

VOICES. A few—nine—ten—over twenty—thirty—seven—fifty-four—sixty-five—seventy-eight.

T. That is, from ten to eighty, generally, is it not? They say that in warm weather a new cluster of eggs will hatch in about a week. Now, how many will undertake to watch a cluster on a growing potato plant, and report to me the exact number of days it takes, according to your observation?

ANS. (A good show of hands.)

T. When the eggs are hatched, a small, hunch-backed, dark red sort of a grub appears. What stage of the insect's life is this?

CHORUS. The larva.

T. Where have I the larvæ sketched?

CHORUS. At *b*.

T. Are they all the same size?

SCHOLAR. No. The small ones are darker colored.



T. Correct. And as they grow older and bigger they become more—

CHORUS. Light—orange—brightly colored.

T. And on their sides they have a double row of—

CHORUS. Black dots.

T. Are these larvæ good feeders?

S. Yes. They have nearly stripped all the leaves off this branch.

T. What becomes of them after they have eaten for a long time? Do they gradually change to the beetle form?

S. I suppose from what you said about the pupa of the emperor moth, that they must have a pupa stage.

T. Right. You cannot so easily experiment on this stage. But perhaps some of you can. If we

were to raise a whole potato plant and place it in a large jar, with plenty earth, and one of these young larvæ, after about three weeks feeding on the plant, the mature larva would descend deep into the earth and there change into the

pupa stage, which I figure on the sketch at *c*. In less than two weeks in the warm summer it would then come forth the perfect beetle, which I have figured at *d*. Now, will some one tell me the time the insect has been found in the various stages?

S. In the egg stage, about one week. In the larva stage, about three weeks. In the pupa stage, about two weeks. Then, in the beetle stage—I don't know.

T. About three or four weeks, during which time the female beetle may deposit as many as five hundred eggs. How could you prove this?

S. Put a new beetle in the large jar with the potato plant, I suppose, and then see how long it will live, and count the eggs it deposits.

T. Now you all have beetles with you. Please examine them. What is the color?

S. A dull orange, with black lines—five on each side.

T. Lift up each side. You see they are only wing covers. I sketch one of them at *e*. What do you find under them?

S. Two fine, thin wings of a rosy color, and they are neatly folded up under the covers.

T. Yes, these are the true flying wings. The

wing-covers, or sheaths, are found in all the beetle family. I may give you the proper name of this family. It is made up out of two Greek words, *coleos*, a sheath, and *ptera*, wings. Hence, the name of the family or order is *Coleoptera*—which just means the sheath-winged.

S. What is its scientific name?

T. Thomas Say discovered it in 1824 on the upper Missouri, and called it in his description, *Doryphora decem-lineata*. The first word means "spear bearer." The last one—the name of the species—means "ten-lined," from the five lines on each wing-sheath.

S. That was sixty-three years ago. How is it that we never heard of it long ago?

T. It was thirty-five years after Say discovered the insect that it began to acquire its bad reputation. About 1859 the cultivation of the potato extended with civilization away east as far as Nebraska. The potato in fact commenced to invade the beetle's country. The beetle, having all along lived on a miserable, wild sort of potato, called the sandburr, tasted the succulent cultivated potato, and immediately attacked it. They grew and multiplied on this fine food prodigiously, and began to march west for more room. They opened their wing-sheaths and flew on during the night. But whenever they could they took such conveyances as the railway and steamboat.

S. How could they?

T. Didn't you see the beetles crawling over everything—even across the roads. Suppose one to come against a car wheel resting at a station. It would soon climb to the upper wood work, and in a few hours might be carried a hundred miles to another station, where it might alight.

S. How fast did they come?

T. At an average of eighty miles per year. They entered New Brunswick in 1877, and Nova Scotia and Prince Edward Island, in force, in 1882. They grow, however, more rapidly in the warmer countries to the south of us. There they produce no less than three broods a year.

S. That is, one female in May might produce 500 eggs, and in from four to six weeks each of these would be a beetle?

T. Yes.

S. And, if one half of those were female, by July there would be 250 times 500 eggs deposited—that is 125,000.

T. Yes.

S. And by August or September these would make 62,500 pairs of beetles, each pair of which would produce 500 eggs.

T. Yes.

S. That is, one beetle in spring, in a warm country, would produce 31,250,000 beetles by the fall.

T. Perfectly correct. Over thirty millions. But as the beetle itself multiplied enormously when it found abundance of food in the cultivated potato, so do some insects which prey upon the beetle. So that just as the beetle tends to exterminate the potato by feeding upon it, so do the beetle's parasites by increasing in numbers tend to destroy it, and thus hold it in check.

S. What are these parasites?

T. There are over a half a dozen insignificant looking flies or insects known as terrible enemies of the beetle.

S. Is it right to call it the potato bug?

T. Bugs do not belong to the *Coleoptera*. They have not the *wing sheaths*, and are put in a family by themselves. Beetle is the proper term. Do you know how to fight the beetle?

S. Yes. By picking off and burning the insects and their eggs, or by dusting or sprinkling the potato plants with *Paris green*, which poisons the beetles. It is all explained in the posters of the agricultural society, and in some of the papers.

T. If one farmer in this community were not particular about destroying the beetle, and all the others were, what would be the result do you think?

S. That he would be raising a crop of beetles for next year, each one of which might produce millions in his neighbor's fields in one season.

T. What should be done with such a man?

CHORUS. Why! his neighbors should look after him.

T. What points are in the farmer's favor at present?

CHORUS. Summer not too hot—season not so long as in the South—increase of the beetle's parasites—the united action of the farmers in destroying them.

S. What if the beetles cannot be kept from increasing?

T. What do you think?

S. We could grow no potatoes.

T. Would that be a great misfortune?

S. I suppose so. But how great?

T. Count the number of acres under potato cultivation at present. Prince Edward Island, 40,000; New Brunswick, 50,000; Nova Scotia, 60,000. How many?

CHORUS. 150,000 acres.

T. Correct. Count the number of bushels raised. P. E. I., 6,000,000; N. B., 7,000,000; N. S., 7,500,000. How many?

CHORUS. 20,500,000 bushels.

T. You know the worth of a bushel of potatoes;

therefore you can find out the money loss to the country if the beetle should win. But if farmers never neglect a slight visitation of these, though they should be ever so few, they will not be troubled by myriads of them next season. Always destroy them, no matter how few they be, because under favorable circumstances one may soon become a million. Now what can you do?

CHORUS. We can tell this to every farmer and every person in the school section.

THE VICTORIAN JUBILEE AND THE SCHOOLS.

In Halifax over 3,000 children were marched to the grassy slopes of the northern slope of the citadel, where they sang patriotic songs before a delighted audience of about 20,000 spectators.

In Pictou about 700 marched in procession, each school department headed by a banner with an appropriate motto, each male pupil and student with a banneret, and each female with a wreath. The procession, led by the band, marched from the new Academy through the town, formed on the Custom House Square, sang the "Empire Flag," when a royal salute of twenty-one guns was fired by the garrison artillery from the fort. Then an oration from Mayor Elliott, and God Save the Queen, the garrison artillery and band arriving in time to join in the closing stanza. The students of the Academy again distinguished themselves in the Polymorphian procession in the evening.

At North Sydney, C. B., a similar display was made. At Bridgewater, N. S., 300 children took part in the public procession. At Yarmouth, N. S., 1,000 is the number reported. At Springhill, N. S., 500. At Windsor, N. S., 300. At Amherst, 400.

We have not seen the number from other towns given. At Charlottetown, P. E. I., all the school children of the city were massed on a grand stand and addressed by the Lieut.-Governor.

The school demonstration in St. John in honor of the Queen's Jubilee on the 20th June was one well fitted to call forth enthusiasm. The children, to the number of nearly 4,000, assembled on King Square, where a platform was erected, from which addresses were given by His Honor Lieut.-Governor Tilley, His Worship Mayor Thorne, Senator Boyd, Dr. Silas Alward. Four bands of music enlivened the proceedings. The gaily-dressed, bright-faced children, the crowds of on-lookers, blocking up the thoroughfares leading to the square, the flowers and foliage, made a scene which will not soon be forgotten by those who were fortunate enough to witness it.

ENGLISH SPELLING CONDEMNED.

The present mode of English spelling has been tried before the tribunal of reason, and has been condemned.

It has been condemned by the unanimous voice of philologists, who declare that it distorts the facts, obstructs the study, and hinders the healthy growth of the language.

It has been condemned by teachers, who declare that it burdens the growing memory, deceives the growing reason, and dwarfs the growing understanding of the children, and makes of their teacher's efforts an enormous waste.

It has been condemned by economists, who declare that it causes every year in the total a loss of millions of days and millions of dollars, in the learning, teaching, writing and printing of superfluous letters.

It has been condemned by statesmen, who see in it the main cause which wraps more than one-tenth of our whole population in total, and nearly one-half in almost total illiteracy.

It has been condemned by Christian philanthropists, who see in the more than pagan darkness of English spelling, a hindrance greater than pagan resistance to the rapid spread of Christian civilization among the nations of the earth.

Science, history, education, literature, commerce, religion, morality, unite in condemning a system which defies science, belies history, obstructs education, hampers literature, hinders commerce and checks the growth of religion and morality—*Spelling*.

[This is a terrible indictment. It is made by responsible parties, however. It behoves our readers to examine it carefully—especially those who are responsible for the educational laws, whether of the State or the University. Fellow writers of the press, the only possible leaders of reform in these days, ventilate the question without a bias. The right will then prevail.—ED.]

LEGISLATIVE ACTION IN PENNSYLVANIA.

The Legislature of Pennsylvania, at the session just ended, passed a joint resolution, introduced by Dr. James W. Walk, of Philadelphia, providing for the appointment by a Governor of a State commission, to examine and report upon the question of spelling and spelling reform in its relation to public education. Governor Beaver has signed the resolution, and will, we are informed, soon appoint the commissioners, whose names we hope to announce in our next.—*Spelling*.

A GREAT TEACHER.

I very gladly comply with the request of the editor of the *EDUCATIONAL REVIEW* to write a few lines about the head master of Uppingham School, Rev. Edward Thring, whose striking address to the Teachers' Guild of England is republished in the present number. I only hope that my few words of personal introduction may lead fellow-teachers to make themselves further acquainted with what he has written or said about the business of our lives.

Whether measured by vigor as an educational thinker, or by actual success in reducing his theories to practice in the great school of which he is the head, Mr. Thring may fairly be considered the first of living schoolmasters.

When I first met him in 1874, at the meeting of head masters at Winchester, England, he was introduced to me by Dr. Ridding, then head master of Winchester School, with the remark that "here is the man who can tell you more about education than any one else in England." The remark was made with all earnestness, and, I believe, with all truth. Since that time I have had the happiness and advantage of knowing him as my friend and revering him as my master, and after being in constant communication with him on educational subjects for so many years, I am satisfied that the remark of Dr. Ridding is even more true to-day than when he made it.

His two most important professional works are "School and Education," which deals chiefly with the ideal structure of a great public school, as that term is understood in England, and the "Theory and Practice of Teaching," a book which treats of the fundamental questions which arise in a teacher's life in a more vigorous and living way than any other I know of. These books have attracted much attention of late years in the United States as well as England. The Teacher's Association of Minnesota last year asked Mr. Thring to write them an address for their annual meeting, and the "Theory and Practice" was adopted as one of the books provided for the study of teachers in that state. A learned New York professor said to me a few days ago that the merit of Mr. Thring's writings, with which he was quite familiar, lay in the fact that they almost invariably "touched bottom." In these days of superficial disquisition on all subjects, no criticism could confer higher praise.

Of his work I can only speak here in the briefest way. Nine years at Eton, of which famous school he became captain, a distinguished course at King's College, Cambridge, where he was a Fellow; then work as an examiner at the universities and public schools, and subsequently, in connection with clerical duty, practice in teaching in parish schools, gave him acquaintance with almost every form of educational work. In 1854 he was appointed head master of Uppingham, then a small and struggling county grammar school. How he has lifted it in his own lifetime into the very first rank of English public schools; how he has there embodied in brick and stone and mortar, principles of educational truth long overlooked; how he has made it an almost ideal place of training, where moral, intellectual and physical culture go hand in hand, aided by all the appliances of structural completeness, cannot be told here. I have tried to state the leading features of the school and

the character of Mr. Thring's reforms in a paper which I have written for the "Century Magazine," and which will appear when the illustrations have been prepared. His governing idea is that justice should be done to each boy, clever or stupid; next to this that for the best work in training you must have the best tools. The results to which these leading ideas have guided him are of the deepest interest, and under their inspiration he has made a profound impression as to the conditions which should control the life of the great public schools. But Mr. Thring is essentially a sower of seed—one whose penetrating originality discovers and throws abroad those germs of truth which become a permanent addition to the living forces of the world. His position as a great educational thinker has been fully recognized of late years, and he has frequently been called upon to address the most important bodies connected with the profession in England. The paper published in this number of *THE REVIEW* is a characteristic exposition of some of his views.

G. R. PARKIN.

Collegiate School, Fredericton, N. B.

SCHOOL AND COLLEGE.

Girton House School, Halifax, closed on June 16th; also, the Academy for young gentlemen. Principal F. C. Sumichrast is winning a high reputation for his school.

The Pictou Academy closed July 8th for the summer vacation without any special exercises. Over 300 students, including special as well as regular, were enrolled during the year.

The Convent, Stella Maris, Pictou, N. S., held a musical review, June 24th. Sixty-six pupils from this institution marched with the public schools on the 21st—in the Jubilee procession.

Dalhousie college celebrated the Jubilee by planting a memorial oak. The contractors are rapidly pushing the work of building. The law class rooms are expected to be ready by September.

THERE were over 300 applicants for license at the closing examinations of the New Brunswick Normal School in June. Of these, one was an applicant for grammar school license, and about fifty for first class.

The public examination of the schools of Charlottetown took place during the last days of June. The *Examiner* sums up their results in the following gratifying terms: "The Chairman of the City School Board, claims, with good reason, that our schools are now 'second to none;' and we cordially agree with the *Guardian* that they are a credit to Charlottetown and the province."

In all the gneœnial addresses delivered at the N. B. University, in June, the subject of more practical, even technical education, was referred to. This is a hopeful sign.

The University of McGill, Montreal, will give a local examination for matriculation into its Medical school at Pictou Academy, N. S., this summer. The time will be announced in our next issue.

St. Bernard's Convent, Antigonish, gave an elaborate and highly successful entertainment to the public on June 24th, at which medals and prizes were distributed by His Lordship Bishop Cameron.

St. Francis Xavier College under President Dr. McNeil, has been considerably extended both as to buildings and curricula. The attendance from abroad is very large. A very attractive calendar is published.

The public closing of the schools of the cities of St. John and Portland took place on Monday, June 27th. The exercises in both cities were of an interesting character, and many valuable prizes were distributed.

The Halifax Academy closed on June 30th. The public examinations were conducted simultaneously in all of the departments, in the forenoon; and in the afternoon a very pleasant entertainment brought the proceedings to a close.

The Nova Scotia Provincial Normal school closed just before the meeting of the Educational Association. The qualifications of its students are constantly rising, and its influence on educational work is yearly becoming more marked.

The Halifax School for the Blind closed June 10th. Its able and energetic Principal, Mr. Fraser, with the "Quintette Band," (all pupils), started on a concert tour through the three provinces. He is doing a noble work, and doing it with a great measure of success.

St. Joseph's College, Memramcook, closed in June. During the past year there were 186 students receiving instruction in this institution, which is doing such creditable work in the higher education. Among its graduates are many occupying distinguished positions to-day in Canada and the United States.

Mount St. Vincent Academy closed June 30th. A splendid musical programme was prepared. Seven

pianos, and in some instances twenty-one performers executed some of the pieces. The literary display was also creditable. A number of gold and silver medals, medallions, and prizes, were distributed to the fortunate winners by His Grace Archbishop O'Brien.

Acadia College closed on June 2nd. The total number of students enrolled during the year was ninety-one. All the senior class (17) were graduated. The total attendance at the Horton Collegiate Academy during the past year was 90; and at Acadia Seminary 83. These institutions are in a flourishing state, and there is a steady and gratifying increase of those who wish to avail themselves of the privileges that these institutions afford.

Convent of the Sacred Heart, Halifax, closed June 29th. The unexpected death of the Very Rev. Monsignor Power caused the omission of the specially entertaining features of a superior programme that had been prepared for the occasion. The awarding of the prizes, which were presented by His Grace Archbishop O'Brien, was the principal work of the day. The exercises were strictly private, not even the parents of the pupils being present.

King's College encœnia came off June 30th. Rev. D. C. Moore, of Stellarton, preached the sermon. Canon Brock announced that the taking of classics or mathematics for degrees was no longer compulsory, a student may give in any three subjects chosen. At convocation degrees were conferred on a number of gentlemen. The Haliburton prize was won by A. P. Murray, B. A., subject, "The Orators of the Maritime Provinces." The subject for next year, value \$30, is "Rise and Progress of King's College." The donor is Mr. J. V. Ellis, M. P., St. John. A Jubilee address to Her Majesty was signed by the college officers and alumni.

The Deaf and Dumb Institution closed on July 2d. Lient. Governor Richey presided, and a number of notables was present, including A. G. Bell, telephone inventor, and Kiesel, a deaf mute from the Washington College for deaf mutes. Principal Hutton, of this institution, has not only an American but a trans-atlantic reputation. His genius as an educator is remarkable. The Institution had sixty-nine pupils during the past year, forty boys and twenty-nine girls. Of these forty-three are from Nova Scotia; thirteen from New Brunswick; seven from P. E. Island; and six from Newfoundland. It is the only institution of the kind in the Atlantic Provinces of Canada,

THE CLASS-ROOM.

Under this head will be placed hints and suggestions to teachers in the arrangement of classes and exercises, selected because they are practical and designed to teach pupils to think. Contributions for this page, adapted for all grades, are solicited from teachers of experience. Catch questions and knotty problems not desired. Those only that will train the thinking and observing powers of the pupils can be inserted.

THE words of His Worship Mayor Thorne, of St. John, in presenting the Corporation Gold Medal, deserve to be written in letters of gold in every class room. He reminded the boys of the necessity of attending to details—of doing even the most trivial services with all their might. It is the boy who "sweeps out the corners" that rises to the highest place. Each must make his future. A great future is not so much the product of genius as perseverance.

ARE you aware, dear sir,—I address male rather than female teachers, because I have found the fault more common with the former,—what a bad habit you have fallen into in repeating the answers of your pupils before proceeding to ask another question? Or perhaps you merely say, "yes, that is right!" Both faults are bad, the first especially so. It is needless repetition, and a waste of time, leads the pupil to express himself carelessly if he knows that you will present the matter to the class in your words (perhaps in stentorian tones) and in short will take the life out of any class in a short time. Break yourself of such a habit. B.

What is Profitable Work for the Primary Schools?

Teachers who have more than one grade to teach find the need of quiet, busy work, which shall be useful, practical and entertaining. They want work that will so occupy the mind that there will be no disposition to play, to be indolent, or troublesome. The following contains some suggestions:

Cut from the daily, weekly, monthly papers, and old magazines, suitable notices and advertisements that contain useful words for spelling. To make durable, paste them upon cards, or stiff card-board, and distribute to the children to copy. Suitable advertising cards may also be used. Bill heads of different kinds of business may be collected for copying; thus business forms are learned, together with spelling and penmanship. Correct forms of notes, bills, receipts, and letters, when not obtainable in print may be written upon smooth cardboard. Little items of information may often be culled from papers and old magazines. These may also be pasted upon card-board for copying. Bits of poetry, and wise sayings of great men may be used in the same way.

Outline drawings, so simple that children could copy, are often found in papers. These the children

could copy and write simple sentences about the drawings.

The children may write lists of actions that are being performed around them; as, John is reading, Mary is cleaning her slate, My teacher is walking, &c. They may also write lists of objects in the room, naming to what kingdom they belong, of what material made, of what use as a whole, or as to their parts.

Furnish rules and let the children measure slates, desks, and books; and, if able to multiply, they can find the square contents of each. They may draw lines a certain number of inches, also squares, and divide into smaller squares, triangles and rhombs, &c.

Get many varieties of leaves, trace the shapes on card-board, cut out and draw in veins. Write names of leaves and their parts upon the traced leaves, and give to children to trace on slates or paper; draw veins, and write the names as in copy. In this way all the parts of the leaf may be learned, also the names of the principal trees as well as garden and house plants.

This employment will keep them quietly busy and will be pleasantly instructive: The doing impresses the memory better than anything else.—*Teachers' Institute.*

Plant Lesson—The Rose.

If possible provide each class with a single rose.

The object of primary lessons in botany is to awaken observation, and an interest in plants and flowers. Children may be taught to analyze flowers, and see the resemblance between those of the same family, long before they are capable of learning the botanical terms.

T.—What flower are we to study to-day? *P.*—A rose. *T.*—What colors do you see in the rose? *P.*—I see red, pink, white, yellow, green. *T.*—Which parts are green? *P.*—The stem, leaves, bud, and a part of the flower are green. *T.*—We will call the green part of the flower the "cup." How many leaves has the cup? *P.*—It has five. *T.*—Which part of the flower is red, and pink, and white? *P.*—The leaves. *T.*—Since they belong to the flower, call them the flower leaves. How many flower-leaves are there? *P.*—There are five flower-leaves. *T.*—What else do you see in the rose besides flower-leaves? *P.*—I see a lot of little stems with yellow heads on them. *T.*—All count them. Finally call for complete statement about the rose, and also position of leaves. Compare the rose with strawberry blossom, with the apple, pear, plum, and cherry blossoms. Have little ones analyze a flower in this manner every day, and thus lay the foundation for botany proper.

EDITORIAL NOTES.

THE death of John Bennet, Ph. D., took place at Dalhousie on the 1st inst. The deceased had long been connected with educational affairs in New Brunswick. He was Chief Superintendent of Schools for the province for many years, prior to the appointment of Dr. Rand. He filled the position of Superintendent of Schools for St. John City for nine years, until a stroke of paralysis in 1881 removed him from active life. Dr. Bennet was a gentleman of scholarly attainments, of quick perception, and possessed of a genial disposition. His kindly and generous nature procured for him many warm friends among teachers, who will long hold him in affectionate remembrance.

SEVERAL articles intended for this issue have been crowded out. They will appear next month.

THE Educational Institute of New Brunswick conferred honorary membership on President Inch, LL. D., of Mount Allison University, at its recent meeting. It was a fitting tribute to a gentleman who has for the past thirty-five years identified himself so thoroughly with our educational progress.

AT THE Kings County Teachers' Institute, which met at Sussex, N. B., on Thursday and Friday, June 23rd and 24th, several excellent papers on the English subjects taught in schools were read. The desire for more careful training in these important subjects is gaining ground.

THE second annual closing of the School of Agriculture, Normal School, Truro, took place on the evening of July 11. Addresses were given by Hon. W. S. Fielding, Provincial Secretary, Hon. J. W. Longley, Attorney General, and Prof. Geo. Lawson, Ph. D., LL. D., President of the Royal Society of Canada and Secretary for Agriculture, N. S.

THE "Sun" says—and we believe its views will meet with general approval—that popular opinion will certainly sustain the school board in offering all reasonable inducements to persuade Mrs. Carr, the accomplished principal of the Victoria school, to remain in St. John. The fame of Victoria school has gone abroad, but only the people of St. John know how much of its success and progress is due to the lady at its head.

INSPECTOR PATILLO in his report says: "I write advisedly when I state that the extra week, or five weeks' vacation, will be generally acceptable to the ratepayers of this district." By a more regular at-

tendance at school when in session, ratepayers may have their children enjoy a longer health-giving vacation, and at the same time have them advanced much more rapidly and thoroughly than as at present. Irregular attendance hurts not only the delinquent, but really destroys sometimes several weeks' work per term for the whole school.

WE have just received the "Minutes of the Seventh Annual Convention of the Provincial Educational Association, of Nova Scotia," held in the Assembly Hall, Provincial Normal School, Truro, July 14th and 15th, 1886. It contains about ninety pages of matter, including the principal papers read at the convention, minutes, etc., of the Normal School Alumni Association, Victoria School of Art and Design, Summer School of Science, etc. It is a valuable compilation, and Secretary MacKay has performed his duty well. We shall take occasion to refer editorially to several subjects treated of within the compass of its covers.

INSPECTOR MACNEIL says in his report: "The advantage of oral instruction is becoming more and more appreciated, and the days when a pupil was required to recite pages of matter quite unintelligible to him, without receiving any other explanation than probably a nod or word of approbation if he knew his task, or a sound caning if he did not, are fast passing by. There are still a few schools where the text book and the rod are the real teachers, while the presiding genii in human form are only so many head-pieces, who imagine that their only duties are to call the roll, to hear the lessons, and to draw their pay; but they are now comparatively few." It is the growth of this sentiment which has called into existence the Summer Science School.

INSPECTOR MORSE says in his report: "In a few cases, however, I have found teachers discharging their duties in a perfunctory manner, and paying little attention to training their pupils to think for themselves. In such cases it has been my aim, as far as the time at my disposal will permit, to inculcate the necessity of getting pupils to comprehend the ideas contained in their lessons, rather than to repeat the words of the text book by which those ideas are conveyed. It is to be hoped that the time is not far distant when all who have charge of our schools will be teachers in the highest sense, and when all ratepayers and trustees will be able to distinguish readily between those who *teach* and those who *keep* school." Next to hoping that the perfunctory teacher may become a live teacher, we pray that the ratepayers and trustees may readily discover him. We shall do what we can to assist.

PERSONAL NOTES.

Inspector Carter examined the schools of Grand Manan and out-lying districts of Charlotte County in June.

Prof. Stockley, A. M., of the New Brunswick University, is spending a portion of his vacation in Boston.

Howard Moore, of Moore's Mills, N. B., graduated at the recent Commencement of Boston University Law School.

Miss Bessie Narraway, B. A., Chief Preceptress of the Wesleyan College, St. John's, Newfoundland, is spending her vacation in this city.

James Trueman, of Carleton, St. John, who has completed his second year in the post-graduate course at John Hopkins University, is home on his vacation.

Mr. Amasa Plummer, of Jacksonville, has succeeded Mr. Palmer as Principal of the Superior School, Hartland, Carleton Co.

Howard Murray, B. A., of New Glasgow, Pictou County, N. S., who has for some time been studying in London, has been appointed George Munro tutor in classics in Dalhousie.

Prof. John Waddell, of the Royal Military College, Kingston, Ontario, who, only thirteen years ago was a student at the Pictou Academy, is going to spend his vacation in London.

C. B. Robinson, Pictou Academy, reports *Aphyllon uniflorum*, Torr. and Gr. (cancer root), as found near Durham, Pictou Co. It is the first Nova Scotian station published for this species.

Arthur Stanley Mackenzie, B. A., at present in Yarmouth, has been appointed George Munro tutor in mathematics at Dalhousie. We regret to learn that at present he is suffering from ill health.

Avard Fulton, teacher at Lower Stewiacke, N. S., the year previous to last teachers' Provincial examination, was so successful as to have his two candidates for grade C. stand respectively first and second on the list for the whole Province.

Edmund L. Newcombe, M. A., LL. B., a partner of the law firm of Meagher, Drysdale & Newcombe, Halifax, and President of the Alumni of Dalhousie College, has been elected by the Alumni as a candidate for the vacancy in the board of governors, and has been appointed.

F. A. P. Barnard, LL. D., S. T. D., L. H. D., President of Columbia College, New York, upon whom King's College, Windsor, N. S., has just conferred an honorary degree, is one of the Vice-Presidents of the Spelling Reform Association of America.

Miss Gertrude King, a graduate of the Hope Institute, Nashville, Tenn., and of the South Kentucky Scientific, Classical, and Normal College, has been engaged to fill the position in the Mount Allison Ladies' College, recently vacated by Miss Freeman.

Rev. George Patterson, D. D., is writing an article on the "Plague of Mice," in northern Nova Scotia, 1815, for the *Canadian Record of Science*. Principal MacKay, of Pictou, we notice from communications in the Provincial press, has also been collecting information on the same subject.

Wm. Saunders, F. R. S. C., who has been for many years President of the Entomological Society of Ontario, of the Horticultural Society of America, etc., has been appointed Director of the Experimental Farms of Canada. The Dominion is fortunate in having among its citizens a man so well qualified for the position.

A. McN. Patterson, Esq., Principal of the Boys' Acacia Villa Seminary, at Horton Landing, Kings County, N. S., we are glad to see, is winning plaudits from the press on account of his successful work. Mr. Patterson is one of our leading educationists, and was one of the most popular Presidents of the old Provincial Educational Association of Nova Scotia.

George Patterson, B. A., late Principal of the New Glasgow High School, has assumed charge of the Richmond County Academy. This spring he won the prize—\$50—offered by the Alumni of Dalhousie College for the best history of the college. He wrote up the history of Victoria County when in charge of its County academy. We may expect next a history of Richmond County, judging him by the successful energy that has hitherto characterized him.

BOOKS AND EXCHANGES.

NEWFOUNDLAND: If our readers want to read a fascinating history, they can be entertained. Newfoundland is the oldest British Colony in America. Its isolation has left us of the mainland in comparative ignorance of its development. Its history must, therefore, be of exceeding interest to the student who has already made himself acquainted with the history of the Canadian Provinces. The Rev. M. Harvey, F. R. G. S., who is the author, has done his work very faithfully and completely, as well as felicitously. It contains about 450 pages, with a large map, and about 30 very suggestive and descriptive engravings.

GUIDES FOR SCIENCE TEACHINGS: Attention is directed to the advertisement of D. C. Heath & Co. in another column, concerning these books, which were referred to in the last issue of the REVIEW. The students at the N. B. Summer School of Science, recently held in St. John, were much in-

terested in some of these, and the cheap and excellent manner in which they are got up.

THE TEMPERANCE TEACHINGS OF SCIENCE: By A. B. Palmer, M. D., LL. D. This little book is designed to teach students the harmful effects of alcohol. During his address on School Sanitation, before the N. B. Educational Institute, Superintendent Crocket warmly recommended the book to the attention of teachers as one worthy of their close consideration. From a hasty glance through the book we can fully endorse this opinion. It does not array a startling list of facts against the use of alcohol, but *educates* children in a convincing and systematic way concerning what is destructive to mind and body. Published by D. C. Heath & Co., Boston.

LECTURES TO KINDERGARTNERS, PEABODY: This is one of D. C. Heath's most interesting publications. Not only is it invaluable to the teacher in the kindergarten, but especially to all teachers in our primary schools, as well as to head masters and principals, who should know what kind of training is done in the lower departments. The contents show the scope of the volume: Lecture I, Education of the Kindergarten, given in Wesley Hall, 1872. II, The Nursery. III, The Principle of Discipline. IV, The Kindergarten. V, The use of Language. VI, A Psychological Observation—first part. VII, A Psychological Observation—second part. VIII, Religious Nurture. IX, Glimpses of Psychology. X, Appendix.

D. C. Heath & Co., Publishers, Boston. Price \$1.

GILL'S SYSTEMS OF EDUCATION: All progressive teachers who are anxious to place their art on a scientific basis, will welcome Prof. Gill's Systems of Education, consisting of a course of lectures, delivered to students in English training schools, on the systems represented by—The Pioneers; Roger Ascham; Comenius; John Milton; John Locke; Vicesimus Knox; the Edgeworth's; Pestalozzi; Oberlin; Wilderspin; Mayos; Home and Colonial School Society; Froebel; Dr. Andrew Bell; Joseph Lancaster; The Intellectual System; Storr's Training System; Brougham; Thos. Wyse; Horace Grant; and the Educative Department in Present Existence. In a clear, forcible, and pleasant manner, the author has united much valuable biographical matter with what he has to say of the founders of each system. The Lancaster and Bell movement in education is treated in an especially able manner. Published by D. C. Heath & Co., Boston.

MONOGRAPHS ON EDUCATION: D. C. Heath & Co. have published under the title of Monographs on Education, a number of essays prepared by specialists, choice in matter, practical in treatment, and of unquestionable value to teachers, but which have hitherto been lost to the profession; being too long for popular magazine articles, and yet not sufficient in volume for books. It is the design of the publishers to furnish these monographs, in paper covers, at a low price, and to continue the series as long as the teachers buy freely enough to allow the publishers to recover merely the money invested. From the excellence of those already

published, we bespeak a liberal patronage by our teachers, who, we feel sure, will welcome each new number as it appears.

Of this series the four following have been received:

Modern Petrography.

By GEORGE HUNTINGTON WILLIAMS, of the John Hopkins University. Price by mail, 25 cents.

The Study of Latin in the Preparatory Course.

By EDWARD P. MORRIS, M. A., Professor of Latin, Williams College, Mass. Price by mail, 25 cents.

Mathematical Teaching and its Modern Methods.

By TRUMAN HENRY SAFFORD, Ph. D., Field Memorial Professor of Astronomy in Williams College. Price by mail, 25 cents.

How to Teach Reading and What to Read in the Schools.

By G. STANLEY HALL, Professor of Psychology and Pedagogy, John Hopkins University. Price by mail, 25 cents.

HOW TO STRENGTHEN THE MEMORY: Natural and Scientific Methods of Never Forgetting, by M. L. Holbrook, is a book which all teachers and students will find invaluable. In it are contained principles, the persistent application of which cannot fail to make even the most defective memory a strong one, and will enable the student to master the most difficult subjects in a comparatively short time. Published by M. L. Holbrook & Co., New York.

WEBSTER'S DICTIONARY: It is difficult to imagine how a more complete lexicon and gazeteer could be published, so as to meet the wants of teachers and students. A teacher who has Webster's Unabridged as his daily companion, is certainly possessed of one element of success.

SPELLING—A MAGAZINE DEVOTED TO THE SIMPLIFICATION OF ENGLISH ORTHOGRAPHY; OFFICIAL ORGAN OF THE SPELLING REFORM ASSOCIATION. VOL. I., No. 1, MAY, 1887. We have just received this new quarterly of sixty pages, which is published for \$1.00, in Boston, by the Library Bureau; in London, by Trubner & Co.; and in Leipzig, by G. E. Stechert, 10 Hospital Street. "What is the Spelling Reform?" some one asks. Before you are aware of it, perhaps, you will find it sweeping around you. The leading philologists and English scholars of Great Britain and the United States have, within the last few years, declared for it, and it is certain we are on the eve of a very important reform. The stickler for our present system of spelling to-day will, in the next generation, be considered as absurd and mischievous—more mischievous than the believers in witchcraft of a former century are considered to-day. See who are the officers of the Spelling Reform in America. See what has already been done in other countries. See what a tremendous gain we may make. No single publication can supply you with so much information as "Spelling." Address: Library Bureau, 32 Hawley St., Boston.

THE CRITIC, Halifax, has issued a very superior Jubilee number, containing articles by some of the ablest writers in Canada. The paper is very judiciously edited, and has a staff of able contributors.

THE RURAL CANADIAN for May has been received. It costs \$1.00, and is published by C. Blackett Robinson, 5 Jordan St., Toronto. We commend this journal to farmers or even teachers in agricultural districts. There are many suggestions in it which might improve agricultural industry through the practical oral lesson given in the schoolroom.

CALENDAR OF DALHOUSIE COLLEGE AND UNIVERSITY: We have received the Calendar of this Institution, for 1887-8. The first half consists of a sketch of the history of the University; governing board and officers; the various points of information required by students in the various faculties, etc., all condensed into about 100 pages. The second part consists of the examination papers of last year, which takes up more than 100 pages. Copies of the Calendar, with examination papers, may be obtained at 25 cents each, from H. Barnes, Esq., Nova Scotia Printing Co., Halifax.

POPULAR SCIENCE MONTHLY: Among the excellent articles for July, is one on the origin of the North American great lakes, which is of great interest to the Canadian students of geography, and scarcely less so the article on Earthquakes, by Prof. G. H. Darwin.

THE CENTURY: The July number of this magazine is a beautiful holiday number, rich in illustrations and in entertaining sketches. "Among the Wild Flowers," by John Burroughs, is an admirably written and profusely illustrated article. Published by the Century Company, New York.

SCIENCE is henceforth to come out in a cheaper and modified form. It is the American standard scientific weekly, published by "the Science Company," 47 Lafayette Place, New York. Price \$3.50 per year. The first two numbers for July have appeared and give promise of maintaining the excellence of this valuable periodical.

THE SWISS CROSS, the organ of the Agassiz Association, is filled with very interesting elementary scientific articles. "Amateur Photography, and its Possibilities," with its chemical engravings, must be a very valuable contribution for students of science. The July number, commencing volume 2, is at hand and is as beautiful in its make-up as it is excellent for beginners in science.

BOOKS RECEIVED.

HISTORY OF ENGLAND FOR BEGINNERS: By Arabella B. Buckley (Miss Fisher), edited by Robert H. Labberton. Published by MacMillan & Co., London, and New York. Price \$1.00.

WOOD-WORKING TOOLS: How to use them. A manual. Published by Heath & Co., Boston.

FIRST YEAR IN LATIN: With Exercises on the Inflections and the Principal Rules of Syntax; also, Extracts from Cæsar's Gallic War, with Special and General Vocabularies and Notes. By George Stuart, A. M., Professor of Latin in the Central High School, Philadelphia. Philadelphia: Eldredge & Bros. Mailing price, 95 cents.

THIRTEEN STORIES OF THE FAR WEST: By Forbes Heermans. Cloth, 12mo. pp. 263. Syracuse N. Y.: C. W. Bardeen, Publisher. \$1.25.

CORRESPONDENCE.

Editors of EDUCATIONAL REVIEW:

Gentlemen,—I am pleased to learn that you propose to aid teachers in the study of Natural History, by a series of such articles as the one which appeared in your first number. The illustration of the lessons, by cuts of native objects, cannot fail to excite a greater interest among both teachers and pupils. For instance, the pupils in our schools, brought in, early in spring, a number of cocoons, which were placed in a breeding cage. Several imagos had emerged shortly before the REVIEW reached us; but as our text book, "Packard's Guide to the Study of Insects," did not give an adequate description of *Platysamia Cecropia*, we were unable to determine the species with certainty. By superposition and comparison we found that a dried specimen of the moth corresponded exactly, in outline and markings, with your finely executed cut. All doubt was thus removed, and your excellent article was read with much greater interest, as we knew it gave the history of the very insect which had already excited our curiosity and admiration.

J. B.
Petitcodiac, N. B.

Editors of EDUCATIONAL REVIEW:

Gentlemen,—We are very glad to see that science lessons of a primary nature will be an important feature of the REVIEW. My school has brought bees, ants, June bugs and caterpillars this week, and we are going to be on the look out for an emperor moth larva this fall, so as to get the cocoon spun in school.

TEACHER.
Windsor, N. S.

Editors of EDUCATIONAL REVIEW:

Gentlemen,—The teachers of Sackville have taken a step in the right direction, by organizing what is known as the Parish Association. The first meeting was held on the 16th April, in one of the lecture rooms of the College, kindly provided by Dr. Inch. Already some ten or twelve teachers are enrolled, and the association promises to be a decided help in the teachers' work.

Sec'y.
Sackville, N. B.

SPECIAL ANNOUNCEMENTS.

All exchanges and letters from Nova Scotia, except those containing subscriptions, should be addressed to "EDUCATIONAL REVIEW," Pictou, N. S., and those from P. E. Island to "EDUCATIONAL REVIEW," Charlottetown, P. E. I.

We ask our readers to overlook the cut in this issue, illustrating the article in the "Ferndale School" series. We were disappointed in obtaining in time the cuts which had been ordered to illustrate the article for this issue.

We must remind those who may receive this number and who have not yet handed in their subscriptions that the paper cannot be sent without an order, accompanied by the amount—\$1.00. If it is not convenient to remit, ask that the paper be sent in order to secure each number as it appears, and remit at the first convenient opportunity.

THINKING IN SHAPE AND PICTORIAL TEACHING.

AN ADDRESS TO THE TEACHERS' GUILD, BY THE REV. E. THRING, M. A., HEAD MASTER OF UPPINGHAM SCHOOL, ENGLAND.

Earth is a battle field. The clash of armies meeting is a mere transient symptom of the ceaseless ebb and flow of conflict, that goes on, all unperceived, in every city, village, home—nay, in every human heart. Education, and the training of life, cannot escape the universal lot. The globe on which we live is a parable. Full of unseen tides of seas of fire with an occasional volcano betraying their existence. Men mark the volcano, and disregard the fiery sea. But if the sea itself is within the reach and control of man, then it would be madness not to study its nature. Now the ceaseless conflict of principle in education, and the causes which create the conflict, are within the reach of man's research and control. They demand our attention.

The fact is that mankind are divided into two camps. Every one belongs to the one or the other, however high and refined, or however low and brutal he may be.

There are the lordly spirits who look on the world as subject to their power, and proceed to handle heaven and earth, man, animal, and matter, according to their own good pleasure. They have got hold of the scissors of creation, and with wonderful sagacity and pains set to work to cut infinity into little squares, which they can understand and master, and move at will. Out of these they compose a universe of their own. It is very ingenious, and they make all fit in, and come within the compass of their knowledge, and form a lovely tessellated pattern, smooth, and hard, a polished perfection of surface, which is presented to all who advance to meet them on their own chosen side of argument. This is one camp, the camp of intellect and knowledge.

Then there are the Shakespears, and all those pupils of light, who approach infinity with its infinite hints of infinity of unknown and unknowable glory, in a spirit of worship, with eyes open, and loving, and humble. Men, whose first glance at creation has merged more or less their own personality in a glad bewilderment of joy at all they see, and who pass on lost to themselves and their own bounded powers, satisfied with an overflow of never ceasing delight as they see; all their being bathed in light; feelings, and intellect, and heart, and tongue, all alike filled and quickened by an inpouring on souls ready to receive. Happy spirits, whose supreme ideal would be to live like a dewdrop, however small, yet capable of taking in a perfect image and reflection of the sun himself,

swallowed up in a universe of light, and yet containing it; light all round; light on this side, light on that, light within, light without, yet with no power in itself to grasp—for who can grasp light? only willing and able to receive.

This is the other camp; the camp of the seeing heart, and the seeing eye, and the love of greatness bowing down before life which is greater than itself.

It is obvious, that the scissors and the squares, and the dewdrop and the sun, are diametrically opposed to one another in essence. It is obvious, that knowledge worship and the lust of the head, are deadly enemies to the loving eye and the humble spirit. It is obvious, that the manufactured universe is a different conception from the universe of infinity that is. It is obvious, that a hard hand stretched out to seize facts, and the winning a way by humility and love into the heart of things, are as far apart as whipping a slave and wooing a bride. They belong to different worlds.

Every living being, consciously or unconsciously, is in one of these two classes, ranged under one or other of these banners, is in one camp or the other.

The pothouse oracle can be as omniscient as the most worshipped philosopher, and with equal justice. Each wields the scissors of creation in his own world. The village laborer with the reverent heart can be as wise as the wisest thinker, and with equal justice. They are both full of light. Neither wants more. Neither sets up for more than he is; as the sailor's kettle did, which when filled claimed the sovereignty of the sea; as many a kettle has done since, and black kettles too.

Until this vast chasm and split is recognized as the one fact in dealing with life, no beginning in education, which is the training of life, has been made consciously on any true principle. This seriously affects our subject to-night of thinking in shape, and pictorial teaching. For knowledge hunting is one thing, and the seeing eye and active mind, another.

I fearlessly assert, what it is not my business to-night to prove, but I can prove it, that intellect worship and the banner of knowledge set up in a kingdom mean death to true progress, death to the welfare of the vast majority, if unchecked.

Few stop to consider what knowledge is. It is only second-hand information. The sum of the facts collected, noted and laid up, by the labor and research of those who have gone before us.

It is very valuable—so is gold; but the old story of the man found dead in the desert by the side of his heap of gold is not out of date, and never will be. Or, if you like it better, the more recent example of the returning colonist, who was drowned when the

"Royal Charter" was wrecked, by the gold in the belt round his body. Supposing the knowledge all got, it may drown you. But as a fact, it is not got. To the majority it is administered like physic to a dog, half shoved down his throat, and then his mouth held, if you can do it for his biting, till he has gulped it down, some at all events, from sheer inability to get rid of it. Many cannot be said to take it at all. And no one will dispute that second-hand information not taken is worthless.

But is it less worthless if not understood? Is it less worthless in the modern version of the fools of our ancestors clothed in modern motley, a dab of language here, a dab of mathematics there, a bit of this, and a shred of that, all stitched together without a pattern or order, parti-colored and patchy, manuals and date-cards, and a pitiable want of any texture of sufficiently thick fibre to let the victim "sit in the belfry and warm his five wits" like the owl? If, indeed, he has any wits left to warm, and they have not all departed under this patchwork process, and left behind nothing but a firm persuasion that he cannot learn; which is only too true.

Throw aside the few who are strong enough to shift for themselves, and I appeal to every schoolmaster in England, from the Board school in its lowest phase to the public school in its highest, as to what in their hearts they believe about the rank and file of their pupils, whether they are willing and capable acquirers of knowledge or not. Above all, whether the results attained by the majority bear any proportion to the time spent. I have talked with many, I have read much, and never yet in talking, and never in writings, outside the magic circle of officials and amateurs, have I found any difference of opinion as to the boys and their work as a whole. I myself after thirty-three years' experience, and a good bit of the thirty-fourth, emphatically state that I have only lately begun to really become aware of the utter ignorance of the English boy in English common words, common stories, common knowledge of all kinds, and the utter indifference to being ignorant, and the still more surprising apathy towards attempts to excite thought, which prevail, and, unless I am much mistaken, are gaining ground in this generation, and becoming worse and worse every day.

My appeal is to Philip in private, not to Philip in print. I affirm that Philip in private is in despair over the mass of boys, and the way he has to deal with them. The work done (the boys that is) is condemned. But it is the boys we want to see full of power and training. What is the remedy for this condemnation? The remedy is "Think in shape." *If you are allowed to do it.* This is the practical

answer. For everything follows if this is done. This alone rouses mind. Mind must be roused. But mind is, without exception, the most perverse thing in creation. Mind will do anything but think. Mind will crawl through any number of manuals, and grovel over as many date-cards as you like: ay, and bear any punishment rather than think. Mind will wriggle out of thinking by every conceivable twist and twiddle. Mind is the prince of shirks.

Yet mind is very active when it likes. Is it possible that this ingrained reluctance to think does not rest with mind, but has something to do with the way in which mind is treated. If you load a racer like a cart horse, and expect him to race, I suspect he would lay back his ears and kick not a little. So does mind, the racer. In the great market of the world the cart horses rule, and test every one by the number of sacks he can carry for sale. Nay, some of the strongest beasts of burden walk proudly round the market carrying their sacks, and don't even sell. The cart horses have it their own way. Every fool can understand sacks, and so the racer is nowhere. Memory, and knowledge, and the many sacks carry the day. Thought hasn't a chance. But thought is wanted, and the mind must be made to think.

The mind must be taught to think in shape, to translate meaning out of shape, and to translate meaning into shape. That is, train the mind, your own and other people's, whenever it sees anything, at once to find out what thought made the shape it sees. And on the other hand accustom it to take every word used and put it into some definite shape, example, or reality. This translation and re-translation of shape into thought and words, and of words into thought and shape, awakens mind, and makes thought possible and pleasant.

Let us proceed to examples. In other words, let us put what has been said into shape, and begin our work by thinking in shape ourselves. I must first, however, lay down as an axiom, that it does not matter in the least how simple, imperfect, or absurd even, the shape may be, if it embodies the thought in a vivid way, as when we say, "He stood like a rock." Here is an illustration of this on a larger scale: A friend and colleague of mine was reading with his little girl of six years old Campbell's poem of Lord Ullin's daughter. She was delighted, but puzzled. There were so many persons, and so much movement. The lake, and the mountain, the ferry, and the road, the pursuers and pursued, got mixed up together and entangled in her poor little mind. Of course her father gave her an elaborate explanation, getting slightly out of temper in tone and word, when she still couldn't see it. He did nothing of the sort.

Breakfast was just over. The table was crummy. He took the crumbs. He made one heap stand for the angry father and his company, another for the mountains, a thin circle for the lake, a little bit of crust for the boat, two little bits of sugar for the lovers, and all was clear. His little girl took in the whole thing, she thought in shape. These few crumbs changed her world for her, perhaps for ever, gave her mind solid ground and living power, instead of leaving her suffocated under a heap of words. Those few crumbs in an able man's hands lived, and imparted life. Never lose sight of the crumbs and their marvellous power. What could we, unhappy that we are, have done with our unhappy classes under like circumstances? O the deadly paralysis of words, words, words! often not understood singly, and, if understood singly, utterly bewildering when whirled round in the boiler of an elaborate, self-satisfied explanation. O the curse of words and memory!

Then again, let us apply another bit of familiar knowledge. At the battle of Worth, at the beginning of the Franco-German war, 17,000 men were killed. Why don't you burst into tears at this vast presence of desolation, agony, death, pain, ruin? Simply because it is not present. The figures are present. They are an arithmetical fact, all pat for an examination paper. But we don't weep for an examination paper; unless, indeed, we have to answer it. These many thousand deaths move you not. But I, for my part, agree with the old General, who is said to have locked himself in his room every Sunday to read Mrs. Ewing's story of "Jackanapes" unseen. I could not trust myself to read it in public, or her "Story of a Short Life," and her "Six to Sixteen," with the death of the old French noble. Yet these are fictions, and only three, set against those many thousands of real sufferers. But the fiction is real, because it is thought in shape; the reality is unreal, because it is fact in cipher, no nearer the heart than any other bit of arithmetic. I have purposely taken these three simple narratives, because they are the most transparent that I know, the most free from artificial excitement, the most direct appeal of heart to heart, exquisite in their simplicity, pure spirit, mind touching mind by the passage of light, clear and untainted by extraneous mixture; in fact, the most perfect specimens of thought in shape. Thus the unreal becomes real, when it is thought in shape, and the real unreal, when ciphers are put in its place.

But figures and arithmetic are not the only ciphers. Every word not vividly understood is a cipher. We will leave common words at present, and take abstract words. The fondness of the youthful and the uneducated for general terms cannot have escaped the notice

of an experienced teacher. The general terms are so convenient; like charity, they cover a multitude of sins. Well, take the axiom, "Law kills love." I dare say you think the illustration so perfect that it conveys no meaning at all. Let us translate it into shape. A good home may stand for love. The children in a good home are young natures undergoing training through love. And accordingly theft, gluttony, and violence, ill-temper, and all the evil passions, either do not appear, overborne by the higher life and its pure atmosphere, or, if they appear, are dealt with in a loving spirit. But let us suppose that the first moment a child appropriates an apple, or breaks a window, the police are called in, and the small offender taken before the magistrate. There would be an end to love. And you get at once the axiom, "that law kills love," as soon as thinking in shape is practised, stamped upon the mind in clear characters; an axiom, which after all is only a condensed statement of most of St. Paul's epistles, even as the gospel is the other side of the same truth, namely, that love establishes a kingdom higher than law, and above it, though it is not difficult to fall down out of the kingdom of love, and the family life, into the realm of law, and make police courts the choice instead of a father's love.

In this way, by thinking in shape, ciphers and memory drop into their proper place, and reality begins. Most people, however, live in a world of ciphers. The hard facts are ciphers; the words are ciphers; nothing lives. The men and women are wooden figures, animated automatons, ciphers too; and the successful master of innumerable cipher-facts becomes a ruler, and sways senates, and deals with delicate life as with wood. And the people, well—the less said about them, when they worship the great cipherers, the better. They have never been taught to think in shape at all events. But the commonest words are still worse off. What everybody knows, nobody thinks about. So different is knowledge from thought. In nine cases out of ten knowledge means the shut mind. The knower has got his x and y pat. They transact his daily work and his talk. He has collected a box full, he shuts down the lid, locks it, and is satisfied. But what does he really know? We will concede him at once a certain amount of bread-and-butter power. X and y do this pretty well. He can set up house; we have furnished him, perhaps, with respectable pots and a little fuel; and he is a reasonably good pot boiler. As Wordsworth's old cook told us, when asked by one of our ladies to admire a splendid sunset, one of those glorious glimpses of heaven's great picture gallery, which we sometimes get, "Lor', ma'am, I am a decent cook, and tidyish

lodging-house keeper, but I don't hold with none of them sort of things." Yes, we make, perhaps, decent cooks, and tidyish lodging-house keepers, though I have heard this contradicted, but mind and sunset are nowhere. "We don't hold with them sort of things." Just look at the small amount of literature, and the slight bowing acquaintance with words which our average samples of humanity have, and which yet they imagine they know. No one ever yet heard an argument going on in an ordinary company anywhere, palace or pothouse, I believe, without becoming aware in the first five minutes, that the speakers are using the same words in entirely different senses, frequently changing the senses backwards and forwards as convenient, not from dishonesty—they have no intention of cheating or conjuring. We have mentioned abstract terms already; but take the word liberty; one combatant means by it, the liberty of the individual to grow as he pleases; the other, the liberty of the majority to make him grow as *they* please; and neither are aware of this. All this arises from their never having learnt to think in shape. Logic can teach the right use of word ciphers; but thinking in shape alone teaches the right use of words. Indeed the most learned men are often the greatest sinners in this, marvellously ready with accurate ciphers and cold facts, which serve to disguise utter non-thought and confusion underneath, just as a smooth sheet of ice coats over the muddy depths and weeds below.

This is the case with the symbols they have and use. But very often there are no symbols to speak of, a practical vacuum. A question is asked. The unhappy victim tries to remember, as he calls it. But there is no memory; it is simply vacuum. Now it is not possible to pull anything out of nothing. Cheques drawn on the bank of emptiness are empty. Nevertheless, three-fourths of work, so called, are frantic attempts to draw cheques on vacuum. The beginning of this is the effort to pour into a reluctant mind some unintelligible bit of cipher knowledge, and to cork it down by punishment. It disagrees; it ferments; the cork flies out; the noxious stuff is spilt, whilst the taskmaster believes it is all right because of the trouble he took to get it in. But it isn't there for all that. Vacuum is vacuum. There is no memory, and where there is no memory to begin with there is no memory at the end. But very often, though there is no memory, the answer is all there, if the poor boy had been taught to use his mind, think in shape, frame an example, look at, and then make answers from what he sees. One lesson on a chair even, would go far towards setting the mind on right method. First, the ludicrous failures to define a chair

show how far the names that are true of things supposed to be known fail to convey the truths that make the names. Then the drawing out from the learner a simple, clear description of the chair which is actually before his eyes, and making him really see what he sees; then the reason for each part, the thought which has taken shape in it; then what would happen, if this or that part were left out; then, if possible, make him draw the chair; then let him see that the chair is a story told in wood; then lead him back to the first makers of chairs, and the sort of life that is implied in a chair, and so on. Then with a firm, strong hand drive home the fact that all this is a history of thought, gradually passing from shape to shape as experience led it on; then finish with the great truth that every shape is such a history, everything we see a living narrative, telling of movements of life to any mind that lives, a story-book capable of unfolding centuries of thought, which he who thinks can interpret; then go on, show him that the whole world is one great illuminated volume of thought speaking through shape, where the illuminations are beautiful and wonderful, but the power of reading what is written more glorious still.

A common chair will tell you all this, if you can read chairs and translate shape into thought, and thought into words. And this again gives practice for translating words into thought and thought into shape, until the learner learns to think in shape. Every shape is life speaking. Hence it follows that shape can be false or true, honorable or dishonorable. A sign-post can be a liar, a building a hypocrite; a room can give honor or dishonor, can glorify or insult. Nay more, life and death can depend on a room. Christianity itself cannot lodge large families in one room in a civilized country and remain christian. The christianity either breaks up the one room into many, or the one room breaks up the christianity. If a stronger power fixes the one room as permanent, good bye to the christianity.

If, again, a stronger power kept a princess in a hovel, and dressed her in rags, such treatment shows contempt for the princess, and she would be treated as a slave by the inferiors, who in this would imitate their superiors. The hovel gives answer, every room gives answer, when called on, and tells the value set on the life that lives in it.

Answer then, ye rooms. Answer, class-rooms, from end to end of England, what is thought of lessons; of lessons, the noblest of all work in the world; of lessons, the sowers of light; of lessons, the princess supreme over the children's life, the true dispensers of nobility, the royal givers of rank, the creatures of the coming generations; the sovereign powers of the

world, which demand unflinching allegiance, and unquestioning loyalty; which call for honor, courage, endurance, skill of brain and hand; which demand self-denial, purity, health, activity of body and mind; queens, which reject with scorn the lazy, the cowards, the self-indulgent, the mean. Answer, class rooms, how we treat our queens. Answer, dirt and shabbiness, fittings hacked and mutilated, tattooed with knives, all daubed with their war-paint of ink, like an Indian savage making ready for the humanizing refinements of scalping, or being scalped. Answer, walls, bare, unsightly, and grimy; or, if not bare, grimly austere with maps, and blackboards, sanctimoniously arrayed with prim pretences of improvement, tidily repulsive, like an ill-dressed woman. Is not the answer in a free translation "Out on ye, out on ye, lessons, necessary animals, but mean, kept for your bacon, not for your own sakes?" And does not the school-boy answer too? It is hard to escape something of the pig if lodged in a sty. The school-boy has not escaped, and never will till "Honor to lessons" is the first article in the nation's secular creed. Everything that meets the eye ought to be as perfect according to the work and workers, as human skill can make it. Give honor, you will receive honor. I know that boys respond with honor, when they and their life work are honored. I could speak with authority if it were fitting for me to do so. Honor to lessons is the first article in the teacher's creed. There are three ways of promoting honor to lessons. First comes the room in which they are given, and all its furniture. The room itself should be decorated. The walls should have honor written on them in honorable characters. All the furniture should be as solid and handsome as suits the rank of the workers. And every room should declare at a glance its value, and the value of the work done in it. Secondly, there should be pictures on the walls, real pictures able to raise the mind of all who see them, by their merit as pictures, as well as instructive from their knowledge power. Thirdly, the books should be as full as possible of good engravings of the countries, landscapes, and cities mentioned, and not least, with good portraits of eminent men. Nothing not good is wanted.

Allow me to say a few words on these three heads. I have ventured to bring up several examples of wall decoration. These first are the decorations of the old school-room at Uppingham, which is now used as an art school and art museum. A dado about $6\frac{1}{2}$ feet high runs along the wall, with panelled squares along the top; then there is a colored space of about $3\frac{1}{2}$ feet of wall, then a fresco line of 3 feet under the cornice beams. Mr. Charles Rossiter is filling every one of these squares in the dado, in number 70, with good

portrait heads of the great artists from the earliest times. The space next above is hung with engravings and chromo lithographs of some of the most famous works; and along the line under the cornice runs what I must call a fresco series of scenes from the history of artist life. There are two of them; the first, Phidias showing Pericles his Athene, and Ictinus, the Plan of the Parthenon, with Aspasia, Sophocles, Anaxagoras, and Socrates, introduced. The second, Apelles and his critics, and the cobbler.

There, again, is the plan of the great school-room. The dado is stone, and low, and does not admit of decoration. The space between the dado and the fresco line is colored Pompeian red, and filled with splendid antotypes of ancient sculpture and works of art, Babylonian, Egyptian, Greek. The fresco line is ornamented with arabesque, and at short intervals medallions with sitting figures of the famous men in literature, of all time, are placed, beginning with King David and St. John, and going through a selection of the great Greeks and Romans; then taking the modern, beginning with King Alfred and Dante, and ending with Wordsworth. The windows have a border of painted glass, words of our Lord on human life from the gospels, and arms of various houses and donors. There is also a great historical window at the north end representing, in eight pictures, the foundation of the school three hundred years ago, and its practical re-foundation in this generation. At the south end there is a memorial window to commemorate the school having been the first to send out a school mission, at the suggestion of the Rev. John Foy, in April, 1869, to North Woolwich.

There are also plans for the decoration of other schools, which Mr. Rossiter has designed for me. This is one, which is being carried out in the high school for girls, in Upper Baker Street, under Miss MacRae. I would especially draw your attention to these illustrations of *Æsop's Fables* in double medallions, one above and one below, with the line of drawings under of the flowers, fruits, birds, insects, of the country. The principle is capable of such wide application. How many story books might appear on our walls?

You will, doubtless, object that all this is very costly. I have kept that till now. Some of it is; but much is not. Much is, I doubt not, within the reach of almost every school in England. You see those frames of frescoes of artist life. They are oil paintings fastened to the wall by their frames. The medallions in the great school-room are oil paintings cemented to the walls; others are water-colors mounted on linen, or canvas, and either framed or cemented to the walls. This is a case of Columbus's

egg. This little fact turns in a moment every painter in England into a wall painter, without ever having to go near a wall. They can sit in their drawing rooms, boudoirs, studios, and do it all. There are few neighborhoods where there are not artists able and willing to paint flowers, fruits, birds, butterflies, effectively. How many a lady in the parsonage or hall would gladly ornament the village school-room, when the work can be done at home. I believe this simple fact of framing, or cementing, the knowledge of which I owe to Mr. Rossiter, to be of world-wide importance. I believe it has opened a new era in education. I look forward in spirit to the time when every village school in the land shall have its decorations, the work of the many earnest, loving, hearts and hands of the educated, who have been eager to help, but not known how to do it. Therefore I have been at some pains to-night to make you think in shape (forgive me this little hit) by bringing before your eyes some examples of the coming revolution in walls, and the sober excesses which our poverty-stricken neighbors, the school-rooms, are prepared to break into.

The second point is, the pictures on the walls. I think a great mistake has been made, when anything has been done, in dealing rather with works of art, and figures, than landscapes. I think photography has not seen its great educational vocation, or been called on by us to see it. Where there are many class-rooms, every room should have its speciality. One should be the English room, and be hung with pictures of the most beautiful or famous landscapes, rivers, mountains; a room of birds, and insects, and flowers, of Britain. There should be a Colonial room, an Indian room; then another should have the great cathedrals; another, Greek landscapes, Marathon, Athens, Delphi; another, the Italian. The class should be able to see Trasymene, for instance, with its lake, and the great plain, lying all flat and open to the eye for many a mile, skirted on the left by those fatal hills. They might be made to march down with the Roman army, the day before, through ravaged lands and ruined homesteads, laid waste by their great enemy. Then they would encamp for the night, not far from the hills sloping gently down to the green space between them and the water. There the consul and his gallant troops entrenched themselves the night before the battle, full of fury and hate, and revenge; and as they worked they would see in the evening light the gleam of the innocent looking lake, and the great plain, as yet untouched by war, stretching away, mile after mile of fertile land, and wealth of corn and cattle, flat and rich, the very picture of plenty and peace. There they passed

the night, Flaminius with a haughty trust that he was the savior of his country, his army maddened at the sight of plundered homes, and the shame of their slaughtered countrymen. They should be made to see the camp break up in that April morning as early dawn grew grey, and those brave, confident men begin their exultant march. On they tramped, the legions in their pride; a fog lay thick on the broad plain and the flat lake; but the dew was on the grass, and the brisk morning breathing in their faces, and keen delight in their strength and life, and the rising sun, fresh in their hearts; and before long they reached the fair, green meadows between the lake and the hills by the side of the still waters gleaming, and the van had passed the narrow point at the end, and crowded all the pass beyond, when, hark! suddenly the still air rang, shattered by the blast of an African trumpet; trumpet after trumpet sounded, the sun came out, the mist rose, and all round them, like a great wild beast, was Hannibal and his army, in act to spring. Then came the thunder of rushing squadrons, the trampling of the horse hoofs, the headlong charge, and a great black wave of death swept in fierce onset down the slopes, and the wild horsemen of the desert leapt upon their prey. Soon, too, the gigantic Gauls whirled over head their huge two-handed swords, and dashed upon the foe. In vain those hardy soldiers turned to bay, borne down by weight, and rush and multitude; perforce they are pushed back into a dense, struggling mass of unavailing valour and sullen despair. In vain the stubborn Roman stabbed and died. In vain for three long hours they fought, with little room for fighting. Javelin and sword made ghastly space, and slowly thinned their ranks for easier slaughter, as the fierce slayers forced their way by slaying into the dense mass of helpless, huddled, human flesh, and pushed the survivors into the lake, to die there. Long before evening, the hills rose calm and silent again, and night came down on the great plain, peaceful as before, save only for those silent witnesses, some 15,000 mangled shapes, lying stark and stiff, between the hills and the lake, and the spoilers busy at their horrible market of death.

In this way each teacher, as he knows how, would turn, from time to time, the pictures to account, and breathe the breath of life over the wall. This, well done even once, would teach something of shapes big with thought, and of thinking in shape, and give a new eye for looking on the world. I need not go on to say that there would be a German room, and above all, perhaps, a portrait room, for good portraits are very powerful; and that each country, as far as possible, should be represented according to its import-

ance, and the funds and space available. Lastly, Palestine ought to be fully placed before the eyes. The maps ought to have a room to themselves, and great care be taken to make them as attractive as possible, by their beauty as maps, by their skilful arrangement and respectful use. In this way no boy could even walk through the class-rooms of a large school without being forced to notice how full the world must be of things worth seeing, and how worthy are the books that tell of them. Even without a teacher, how much the walls can be made to print on the dullest mind! and with a teacher, what thinking in shape there can be! what a breathing of life into countries, and cities, river, forest, and glen! what a suggestion of unexplored regions of delight! what a whispering of liberty to roam, and adventurous holidays! what a certainty of activity of thought! Verily, the walls are very living, if in this way made to live. Many a poor hammerer-in of lessons might profitably wish himself a wall.

After what has been stated, very little need be said about the books, all important as they are, for the same principles and treatment, in the main, apply to them. I would repeat, that really good landscapes, views of cities, very seldom single buildings by themselves, and portraits, are wanted, with first rate, attractive looking plans. I lay great stress on beauty and attractiveness. Without beauty, an illustration is degrading to the thing it professes to illustrate. I have brought up a little book of plans—schoolwork from America, done as class-work by pupils between the age of 16 and 18, in Minnesota, which has been sent me from their Normal School. I think it illustrates what we want to get, and what a school can do in a practical way. They appear to me a thorough example, as far as they go, of thought put into shape in an attractive way.

These are a few of the principal ideas which appear to belong to thinking in shape, and the pictorial mind, as a matter of practical teaching to be daily, hourly, always, put in practice. Few, I believe, are aware of the progress that has been made in pictorial mind since the parables were spoken.

Thinking in shape, and pictorial teaching, at once turn all created things into new language for thought. Every created thing becomes on the spot, a possible new bit of thought, a possible new word born into the world of speech. I throw out, as a suggestion for any master of language, as distinct from a doctorer of words, to examine into the curious fact that, in the last eighty years, the English language has in this way doubled itself, by flashing new light into old worlds, by new combinations of words, by freer use of allusions and metaphors, and by pictorial handling

of its material; and that it is practically a new language in its wonderful increase in power of expression, and the breathing of new life into its shape. For expression goes on forever, as higher life produces high manifestation of life, feelings, and thought, in human face and form, and again becomes able by being higher, more sensitive, more sympathising, not only to see and interpret the new shapes, but to find endless riches of unknown stores of precious discoveries in the old. This is the only true path of progress. And this we owe to the parables. The parables came into a heathen intellect world, which called the earth "insensate," or "the giver of food," and saw nothing but discomfort, or the comfortable, in what it did see.

The parables came into this dead world as an entirely new revelation that all created things were thoughts clothed in shape, created for the express purpose of exciting and communicating thought; that they were language—the language of God to man; an open book for man to use; pictorial teaching. The earth and all creation become in this way known to be full of secret life. The outside remains the same in its main features, but, like an expressive face, it can all be lighted up from within as soon as the living life moves; and then the linear outlines, which are all in all to the semi-heathen eye and mind, practically disappear, transfigured and glorified by new powers of life from the inner life movement. Thus, expression and pictorial mind have no end, but go on for ever; whilst outline and linear grace is finite and bounded. This is the only real progress that is possible in art, whether by art we mean literary art, or pictures, or any other of the languages that appeal to eye or ear. Art can be more expressive. Expression, by laws of nature, more and more renews itself in more excellent beauty, in which the actual outward shape is ever more and more merged. The inner nobility passing into a visible glory in which the bare shape is lost; even as the apostle saw his Lord, with a countenance as of the sun shining in its strength, so radiant that no fixed outline was seen, and with feet that burned like fine brass in the furnace; a wonderful appearance, that is, of form without outline.

This is the goal expression, brought out by inward life, to an extent that makes outline vanish in an effluence of mind and feeling which absorbs all other sight. This it is the special province of pictorial mind to see, and read, and interpret. Time forbids my dwelling on this, however little; but this vista of infinite, eternal progress is opened up by thinking in shape, and pictorial teaching, and creating the pictorial mind, as new expressiveness comes into sight

and demands increasingly new power to show it. The pictorial mind first pictures to itself all its own ideas, and thinks in shape; and, secondly, is ever extracting ideas, new and old, out of the things it sees, picturing to itself all the words it uses, translating and re-translating thought into shape, and shape into thought, till all things live and move for it in a universe that is living thought incarnate. The lesson book is always before it. In city or desert, church or hovel, street or field, with flower, or trees, or cloud, or sun, or animal, or bird, or insect, from end to end of all things, there is the everlasting voice crying, "He that hath ears to hear, let him hear; he that hath eyes to see, let him see; for life infinite, language universal, lies at your feet for pleasure and use always." The pictorial mind is the only power man has that is capable of infinite progress. It is the only power that belongs to all men. It is the only power that is within reach of the poor. It can be taught. It can almost be created.

As the world goes on, and knowledge increases, it will be more and more impossible to know it all, a thing which was once quite within reach. Every man, however learned, will be narrowed by degrees down to a single subject. But subjects are many. There are a thousand languages, for instance; to know how to speak even half a dozen really well, is an achievement, and so on, through the whole range of knowledge. How can any one man cope with this accumulation of facts? Boasts of knowledge, therefore, belong to the nursery level, betokening stupendous ignorance of man's capacity for knowing, and of what there is to know. Let us get out of the nursery, and betake ourselves to true progress and men as they are.

Knowledge with its broken victuals, and its half-starved paupers snatching at the scraps, has lorded it long enough at the gate of its monastery. It is high time to turn to better things, to liberty, to the free use of active powers. Pictorial teaching is the great agent to advance this. If it once gets fairly out of prison, and touches the world, all will be changed. And there are signs of better things. There are upheavings of discontent; the sea of living fire within is in motion. There are everywhere groanings of bondage felt, of loathing, and scorn, for the dead hand, the really dead hand, the dead, dry, hard hand of power from without set on the heart of teaching, and stopping its free pulsations. There is a rattling beginning to be heard amongst the skeletons, and bones, and specimens, and the stuffed figures, and ticketed vocabularies and verbs with pins through them ready to be struck down, and all the Noah's Ark assortment of the examination, inspection, scisserdom

repository of the manufactured world of scisserdom. There is, too, an English-speaking world besides England to which we appeal not entirely in vain. Moreover, true ideas, like music, know no country, are exempt from the curse of Babel, and pass from heart to heart. Yes, there is a shaking in the valley of dry bones. It may yet be, as in the vision of Ezekiel, "There is a noise, and behold a shaking, and the bones came together, bone to his bone. And, when I beheld, lo! the sinews and the flesh came up upon them, and the skin covered them above. And he said unto me: Prophecy unto the wind, and say to the wind, come from the four winds, O breath, and breathe upon these slain, that they may live. And I prophesied, as He commanded me, and the breath came into them, and they lived, and stood upon their feet, an exceeding great army." There is a noise and a shaking, and a hope, with us too. May not we, too, prophecy to the four quarters of heaven, where the English-speaking race over all the world is found, and call upon the breath of life to come and breathe life into the dry bones of our manufactured world, and put an end to the dead hand. There is life stirring. No true life ever dies. Kill it here, it reappears there, and in spite of all killing, lives. There is life in thinking in shape, and in the pictorial mind. And life is universal. All men have life. All men can have life trained, and raised, and taught. The true definition of a teacher is, "One who sows seeds of life, and fosters them." Let us bury the bones that cannot live.

But thinking in shape, and the pictorial mind, are life powers. They can bring light to the dustiest, darkest corner of memories which are strewn with the dust, and broken chips of knowledge. There will be a veritable resurrection when thinking in shape is taught.

We stand on the threshold of an almost untravelled world in beginning this work. We are bound on a voyage of discovery; a band of pioneers—yet certain of our promised land. Let the be-all and end-all of teaching be for us the thinking in shape, and the pictorial mind. Let our watchword be "Liberty to teach."

KINDNESS is stowed away in the heart like rose leaves in a drawer, to sweeten every object around.

TRUE greatness shows itself in ignoring or quickly forgetting, personal injuries, when meaner natures would be kept in unrest by them. The less of a man one is, the more he makes of an injury or insult. The more of a man he is, the less he is disturbed by what others say or do against him without cause.

QUESTION DEPARTMENT.

Questions on scientific subjects may be addressed to EDUCATIONAL REVIEW, Pictou, N. S., to whom also all natural history specimens may be submitted for identification; those on ancient classics and mathematics to EDUCATIONAL REVIEW, Charlottetown, P. E. Island, and all questions on general subjects—English, school management, methods, etc.—to EDUCATIONAL REVIEW, St. John, N. B. On technical questions the editors will seek the views of teachers of experience, in order that this page may be of the greatest possible advantage to our teachers.

Questions and Answers.

M. S. D.—What is the enclosed fine, white deposit, taken from the bottom of Irwin's Lake?

It is what has been called infusorial earth. But the name is incorrect. The infusoria are animal organisms. This white powder belongs to the vegetable kingdom. It consists of beautifully ornamented, transparent silicious shells of various shapes. Each shell is so small as to be invisible to the naked eye, and constituted the skeleton of a one-celled plant belonging to the order *diatomaceæ*. The *diatom* is a plant whose cell-wall is made up of the most regularly sculptured transparent quartz. The living part is a soft yellowish protoplasm which fills the cell and secretes the silica from the water for its covering. These cells multiply in a regular way, and many species have the power of moving through the water, while others are always attached to some object. Our specimen is very pure and white, consisting of the tests or skeletons of dead diatoms which have probably been accumulating in the lake for ages. Boiled in an acid or burned in a fire those shells—or more properly speaking—*cells*, only become more clear and

beautiful. This material has been used for absorbing nitro-glycerine to make dynamite, for tooth powders, for polishing powder, for packing fruit. Being composed of cells, it is extremely porous. It is also used for making water glass, for silicious tiles, for packing steam pipe packing, being a good non-conductor of heat, and for other purposes.

X. Y.—1. Will the citrate of silver make sea water drinkable? 2. If so, is it practicable on a large scale?

Ans. 1. The citrate of silver changes salt water into a sugarless lemonade. When put into sea water a white heavy precipitate is formed which soon settles, leaving a clear liquid above. If the proper proportions are used, all the salt will be precipitated to the bottom with the silver, forming the chloride of silver. The water above, will contain the citric acid, and will therefore be sour. If the proper proportions be not exactly used, there will be either some salt or citrate of silver remaining in the water. 2. For every ounce of salt taken out of the sea water, about *two* ounces of metallic silver made into the citrate will be required. So the process must be rather expensive, although the silver chloride made in the process is not lost.

A. M.—There is large and also a small yellow butterfly quite common here. What are their names, do you suppose?

Ans.—The large one *Papilio turnus*, (swallowtail), the small one, *Colias Philodice* (clouded sulphur) very probably.

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