

PAGES

MISSING

The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

PUBLISHED MONTHLY.

ST. JOHN, N. B., MAY, 1892.

\$1.00 PER YEAR

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Editor for New Brunswick.

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THE EDUCATIONAL REVIEW.

G. U. HAY, St. John, - - - - - Managing Editor
W. T. KENNEDY, Academy, Halifax, - - - - - Business Mgr. for N. S. and Nfld

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Subscribers should promptly notify the REVIEW of change of addresses. Communications from New Brunswick and Prince Edward Island should be addressed EDUCATIONAL REVIEW, St. John; from Nova Scotia and Newfoundland to W. T. Kennedy, Academy, Halifax.

THE advertisement of the Summer School of Science, with the notice of the change in the time of meeting, will be found in another column. Instead of opening the 4th of July, it will open the first Monday in August. The change of time was found necessary for several important reasons. The instructors, with scarcely an exception, have acquiesced in the change, and it is hoped that intending students will find the time more favorable than immediately after the close of their schools.

LADY TILLEY'S efforts to establish a reformatory in New Brunswick have taken definite shape, and in a few weeks subscriptions to further this desirable object will be opened in various places throughout the province.

MAY 13th has been appointed Arbor Day in the inspectoral districts of New Brunswick.

IN THE Transactions of the Royal Society of Canada for 1891 there is a paper by W. F. Ganong, M. A., on the site of Fort LaTour. Mr. Ganong has come to the conclusion that the site was at Portland Point, at the head of St. John harbor. The article is illustrated by several maps; and the arguments with which Mr. Ganong supports his position furnish very important chapter in Acadian history.

WE HAVE just received the calendar of Acadia Seminary for 1891-92. This excellent institution is beautifully situated in the quiet and neat little town of Wolfville. It offers three courses of study, each extending over four years. The first three years of the Literary Course is somewhat more than the equivalent of grade "B" work. There are twelve teachers, seven in the arts department and five in the musical department. Those of the teachers with whom we are acquainted rank very high, not only as scholars, but also as teachers and ladies in every way qualified, "not only to train and develop the mind, but to cultivate the heart; not only to mould character, but to implant lofty aims and ideals." Much attention is given to voice training and calisthenics under the superior teaching of Miss H. E. Wallace, so well known to many of our readers as the charming elocutionist of the Summer School of Science at Parrsboro. There are about 100 pupils enrolled, of whom 42 are taking a full course. Necessary expenses for a full school year amount to about one hundred and fifty dollars.

THE PROJECT for a new school house at Amherst is progressing favorably. The first plans were too expensive. After some modification they still exceeded the amount voted by \$7,000. At a public meeting held lately this additional amount was voted by a large majority, and the work will now be rapidly carried on so as to be fit for occupation next winter. The building and grounds will cost over \$32,000.

DR. MACKAY, Superintendent of Education, is suffering from a slight attack of scarlet fever, which unfortunately places his house in quarantine for the second time, and immediately after a trial of eight weeks of the same kind. The inconvenience to himself and to the public will not be so great as it might otherwise be owing to the fact that he is assisted by Mr. G. W. T. Irving, a most judicious secretary and an able and experienced educationist.

IN OUR N. S. exchanges we are glad to note the interest taken in the terminal examinations of academies and other schools. Several columns are devoted to the publication of the names of successful candidates for promotion. We doubt the propriety, however, of publishing the percentages made at these examinations. A stimulus of this kind stimulates where it is not needed and only does harm, and it perhaps only hardens or discourages those who feel themselves unable to compete for these distinctions successfully.

EDUCATIONAL LEGISLATION IN NOVA SCOTIA.

A government bill amending the education law of Nova Scotia has just passed through the legislature. It will undoubtedly cause a little revolution in the old order of things. On the first of November next a school term will commence which will end probably about the first week of July. This transition term will be understood to be for all purposes three-fourths of the regular school year. Under the new order the school year is defined as commencing on the first of August and ending on the last of July following. The summer vacation will, however, come out of the end of one year and the beginning of the next, possibly taking the last three weeks of July and the first three weeks of August. This vacation will naturally separate the closing of the schools from the opening by a sufficient time to enable teachers who change their position to do it leisurely without injuring their work at the closing of the one school or the opening of the other. It will also do away with the evil of changing teachers at the end of April and October; and will save the equivalent of several weeks of effective school work to the country.

The arrangement will be specially advantageous to the high school institutions; as it enables them to articulate perfectly with the college or university system. It will therefore enable them to take up the course of study more leisurely, instead of rushing partly over it twice a year, as at present, to the utter discomfiture of young students whose hearts are not entirely set on study. The provincial examination will take place exactly at the closing of the schools, we presume.

From one of the amendments making preparation for a change in the number of provincial examiners, and the examination of those pursuing the high school course of study, we fancy we see an intention of increasing the board of examiners, so as to enable the results of examination to be published more rapidly than at present. This annual examination will be used as evidence of scholarship on the part of candidates for license to teach. We infer, therefore, that all pursuing a high school course of study can at the end of the school year take an examination on their year's work and if successful carry away a provincial diploma or certificate of scholarship, which will have a definite value all over the province, and may be used according to its grade as evidence of scholarship for the respective classes of license for teaching, or for matriculation into our colleges and universities, etc., etc. We presume this means that the double course of study imposed on our high schools will be unified, viz., the course prescribed for

the high schools, and the syllabus for teachers' examination. Seventy-five per cent. of the best high school students are candidate teachers, who, therefore, really determine the curriculum, although a feint of following the prescribed course had to be made in the county Academies, which are subject to the annual visitation of the Superintendent. We always thought that what is good for the general high school student should also be good for the teacher. But everything, of course, depends on the regulations of the Council of Public Instruction; and these the country will now be most anxiously awaiting. It will be too much to expect that such an overturning can be made without some point being overlooked; but we have every confidence that any defect will not stand long without remedy.

Among other changes we notice that of the annual meeting of the school section to the last Monday of June, just before the close of the schools. Also the repeal of that clause of the act of 1887 limiting the sum total of grants to the county Academies. There is encouragement given to advanced scholarship by giving a provincial grant to "A" teachers employed in doing high school work, fifty per cent. greater than the "B" grant. Provincial grants will as usual be payable half-yearly; but county grants only yearly. Trustees, we presume, will be required to pay teachers at least semi-annually, as the provincial grants are to be paid. That would mean that sectional assessments should be levied in the fall or early winter, the county grant coming in with the arrears of this assessment to pay the last annual instalment. Some of these changes will leave more time for our inspectors to do their proper work instead of spending time in their offices doing clerk's works. The time of the inspectors' chief clerical work will be during the vacation, when the schools are not in session, and not as now during the whole first month of each term, when the inspectors would be especially useful in organizing new schools and helping new teachers. This vacation period must also be the time of special activity in the education office, we imagine, if provincial and county grants are to be promptly paid, and the results of examination published without delay.

TEACHERS' INSTITUTES.

The season of Teachers' Institutes is now approaching and it behooves teachers to make their plans accordingly. What with the Provincial (N. B.) Institute in St. John, the Dominion Association in Montreal and the National Association in Saratoga, to say nothing of the Summer School of Science and

the various County Institutes, there will be no lack of opportunities to attend these meetings. The contrast between the present and twenty-five years ago with regard to Teachers' Associations is most marked. Then they were rare, now they are held everywhere. To these meetings the teacher of to-day owes not a little of the improved *status* of the teaching profession as compared with that of twenty-five years ago. "In union is strength" is well exemplified in these associations which are now recognized by Boards of Education everywhere as mediums through which all educational reforms and improvements may be promoted. They have created a public opinion in regard to educational affairs that has been most beneficial to the teachers and to the schools. They have enlarged and broadened the teachers' ideas, led them to appreciate more fully the dignity and responsibility of their profession, and stimulated them to improvement in knowledge and method.

They have brought the teachers more in contact with the public, by which a sympathy for and an interest in the work of teaching has been created. They have demonstrated that the teachers as a body are not actuated by mere mercenary motives but that they are earnestly desirous of improving themselves and by profiting by the experience of others to do better work.

While these meetings of teachers are more largely attended each year, yet they do not attract all. The earnest, progressive teacher always attends the County Institutes and the larger meetings when possible. Time servers never appear, but while they may save a few dollars at the time they sustain a permanent loss, not only in regard to their own improvement, but in the estimation in which they may be held as teachers thereafter. Trustees and school officers are beginning to take note of teachers who do not keep step with the times.

EXTENSION OF THE SUMMER VACATION.

It is a mistake to suppose that the summer vacation in New Brunswick has been lengthened in the interests of the teachers. While none of the teachers are likely to object to the extension, they as a body have taken no united action to bring it about, and the change was not made in deference to their wishes, but owing to the pressure that was brought to bear by Boards of Trustees from nearly every section of the Province.

It has been recognized for some time and been pointed out by the Inspectors that more and more schools each year were taking the matter of summer vacations in their own hands and extending them at

will. In many districts, especially in the country, an extra month has been taken, and often the teacher was the loser, not only by the government money for the time, but for the district pay as well. In the cities the children have not returned to school promptly and very little real school work has been done until the beginning of September. It is now hoped that a vacation of eight weeks in cities and six weeks in the country will meet the reasonable requirements of both, and that the average school attendance for the Province will show an increase in consequence of the change.

One of the disadvantages of the extension is that it increases the disparity in the number of teaching days in the school terms. This inequality is now taken into account in many country districts—more salary being given for the first term than for the second. It is a question whether it would not be better for the government to allot the Provincial grants in accordance with the number of days actually taught in either term on the basis of the number of teaching days in the year rather than the term as at present. Where the agreements are for the year, this, of course, would not matter, but in the great majority of districts agreements are for the term, and in these cases the present division is a very unequal one.

No good reason has ever been advanced for the longer vacations in the cities as compared with the country. Precedent is in favor of the longer vacation for the town, and it seems to hold good everywhere.

THE TEACHING OF PHYSIOLOGY AND TEMPERANCE.

The Act just passed by the N. S. Legislature, providing for the more thorough study in the public schools of the nature and constitution of the human body, the laws of health and the effects of alcoholic drinks and narcotics, reads as follows:

Be it enacted by the Governor, Council and Assembly, as follows:

1. Appropriate instruction shall be given regularly in the public schools as to the nature of alcoholic drinks and narcotics, including tobacco, and special instruction as to their effects upon the human system, in connection with the several divisions of the subjects of relative physiology and hygiene. Such instruction regarding physiological and hygienic laws and the effects of alcoholic drinks and narcotics shall be given orally from a suitable text-book in the hands of the teacher to pupils unable to read, and such instruction shall be given to all others with text-books in the hands of the pupils, and from text-books as well graded to the capacities of the pupils as other text-books are, and such instruction shall be given as aforesaid to the pupils in all public schools in the province.

2. The text-books to be used for instruction required to be given by the preceding section of this Act, shall be prescribed by the Council of Public Instruction, who shall notify the secretaries of the respective Boards of Trustees and of the School Boards of the several incorporated towns and cities within the province of the choice of the text-books so selected by them as aforesaid, and said text-books used in the primary or intermediate grades shall give at least one-fourth of their space to the consideration of the nature and effects of alcoholic drinks and narcotics, and the text-books used in the higher grades shall contain at least twenty pages of matter relating to this subject.

3. It shall be the duty of school officers and school inspectors to report to the Council of Public Instruction any failure on the part of the trustees or the teachers of the sections under their control to carry out the provisions of this Act. Upon its being shown to the Council of Public Instruction, either by such school inspectors or school officers, or ratepayer, that any teacher or trustees have failed to carry out the provisions of this Act, any such failure shall be deemed sufficient cause for withholding wholly or in part from any such teacher or trustees provincial and county grants.

Regarding a similar enactment elsewhere, Mrs. Hunt writes:

No candid reader of this statute can deny that it clearly demands:

1st. That these truths shall be taught, not an exhortation or homily about these truths, but the truths themselves.

2nd. That certain truths shall be taught "as a regular branch of study, *i. e.*, in the same manner and with the same thoroughness that other branches are taught."

This class of truths is clearly set forth in the language describing this study, *i. e.*, "physiology" as here used, meaning the structure and functions of the human organism, and "hygiene," or the laws of the health of that organism, especially with regard to the use of alcoholic drinks and other narcotics. Although the language of this statute seems very explicit, in view of the fact that the science it requires taught is comparatively new as a school branch, it may not be strange that sometimes teachers and others entrusted with its enforcement have misapprehended its demands.

A similar misconception or objection has arisen. The objectors, as I understand them, say:

1st. "Temperance is a moral, not a scientific question; if taught at all it should be from a moral standpoint only." "The strengthening of the moral nature is the best preventive of intemperance." "You should strengthen the will to prevent the pupil from drinking," they say.

2nd. "If you teach the pupils the evil nature and effects of anything, the law of perversity in his nature will make him want to try that thing for himself," etc.

In answer to the first objection, that "temperance is a moral, not a scientific question," etc., let us enquire:

1st. Is it not true that a moral question is one that considers what is right or wrong in action on the part of beings capable of choice?

2nd. Are there not certain facts which are the reasons for an action or course of action being right or wrong?

3rd. If these facts, the reasons for the right or wrong, are duly arranged in the case of each obligation, do they not form the science of that special obligation? Webster says that "science is knowledge duly arranged."

4th. Can a person be taught the principles of morality in any case, or to intelligently choose the right, without being taught the facts which show why one set of acts, or course, is right and another wrong; and are not these facts the science of the case?

"Strengthen the will," do you say, "to resist temptation." How do we strengthen the will? The will is the faculty in us that acts on choice, and our choices are more or less influenced by our knowledge or ignorance of the facts in the case. How would you strengthen the will of a boy against the temptation to row across the Niagara River a little way above the Falls; by telling him he must not, it would be wrong, or explaining to his reason the perils that inhere in that fatal current? How would I strengthen a boy's will against intemperance? I would try to give him intelligent reasons on which his will should act, just as I would teach him the character of the Niagara Rapids. I would teach him the nature of those other, the alcoholic rapids, that lead to a worse, a more hopeless plunge, into utter darkness. While I would never exaggerate, I would search for the truth on this topic as for "hid treasures," and then teach it, abating not "one jot or tittle," leaving the consequences with Him who said, "I am the truth." He has so made the human mind that it is moved by truth that warns, as well as promises. I would not preach at the boy or weary him with repeated homily, but I would lead him, through the study of the laws of his own being, to see and understand for himself that the inestimable blessing and happiness of a strong, healthy, useful life are the result of obedience to laws that are written in our living tissues, and that the penalty of disobedience inheres in the law itself.

"But," the objector says, "if you do, your boy will want at once to try the use of these things for himself." If we tell the boy the perils of the smooth, safe-looking stream above the Falls, will he immediately wish to embark thereon? Is it a rule that teaching the consequences is only furnishing a motive for immediate plunging into that evil?

Experience must after all decide, and happily we are not without precedent. Wherever in the thirty-five States of our country the spirit and letter of the law requiring this study are obeyed, and well-graded text-books on this topic, containing the truths the law requires taught are used, with the same wise and thorough methods of teaching, as in the case of other branches, pupils thus taught have not consequently rushed headlong to the saloons. On the contrary, an intelligent aversion to alcoholic drinks and other narcotics is manifest; fewer cigarettes are smoked and pupils are more careful to obey other laws of hygiene.

Shall we make no attempt to teach the children better because the fathers drink and smoke? Because some parents murder the Queen's English, we do not therefore think it useless to teach their children correct speech, and the generations rise in the scale of better utterances.

The difficulties are appreciated of teachers who were commanded to teach this topic and given nothing to do it with but the imperfect, badly-graded books first prepared. But a better day has dawned. Well graded manuals of instruction that contain those truths adapted to all classes are published in great abundance and variety.

Truth is the lever of Archimedes that moves the world. The truth against alcohol and other narcotics as the greatest enemy of man is out. Ours is the opportunity to scatter that warning truth; and we have the promise that "the truth shall make you free."

The right of the state to tax for the support of education implies that the education given shall be the best adapted to secure the safety and welfare of society. The school is bound, so far as it can be done, to impart that knowledge and to form those habits which prepare them for the best citizenship.

In times past vague and imperfect conceptions of the laws of health led to their constant violation to the great injury of the individual and of the state. But modern investigation has revealed a large body of scientific truth, regarding foods, ventilation, drainage, clothing, cleanliness and the effects of the so-called stimulants and narcotics. In the modern conditions of life a knowledge of these facts is of the most vital importance.

To overcome the inertia of ignorance, the prejudices and inherited tendencies towards strong drinks and the cupidity of the many who profit by these weaknesses, it was necessary that this new school study should receive the moral support of special government enactment.

It will be a matter of some difficulty and time to select the best text-books and yet have them cheap enough to be within the reach of all.

In the meantime it would seem to be the duty of all teachers to procure copies of some well-organized and approved series of physiological temperance books and to familiarize themselves and their pupils with the subject.

As an aid in giving oral lessons, the Pathfinder series will, perhaps, be the most helpful. They are now used in some parts of the province. For the teacher's private study, "Martin's Human Body and the Effects of Narcotics" will give the best results. It has been found by experience that the health instruction contemplated by the law can be given in fourteen weeks, three lessons of twenty minutes each per week, or in all fourteen hours of school work per year—a small amount of time considering the importance of the subject. Of course both teacher and pupils are supposed to come prepared for the recitations. The result of this work will be watched with very great interest by all parties.

It (the Dominion Educational Association) will foster an *esprit de corps* in the teaching profession, a thing especially to be desired among the teachers connected with the public school system, and it should be a valuable aid in removing one principal cause of weakness and inefficiency in that system, that, namely, which comes from regarding teaching as a mere episode in one's life work—a stepping stone to something more permanent and desirable.—*Messenger and Visitor*.

For the REVIEW.]

NATURE LESSONS.

THE SCHOOL-BOY ZOOLOGIST—NO. V.

REPTILES AND BATRACHIANS.

If some of our birds were stripped of their feathers they would appear anatomically very much like some reptiles. In fact some birds might be said to be feathered reptiles. Crocodiles and alligators we have not. The only four-limbed reptiles of these provinces are the turtles. Their four limbs are used for walking, and instead of feathers they are covered with scales which form a bony shield above and also below the body. The lizard division of reptiles has no representative among us. What are called lizards are merely salamanders, which belong to the class of Batrachians. Lizards are covered with scales, salamanders and frogs are not. There are other very important differences also. As the skin covering of the mammal is *hair*, and of the bird, *feathers*, that of the reptile is *scale*. Our snakes are the typical reptiles. Some snakes have rudiments of hind limbs existing; but those of our provinces have no rudiments of limbs whatever. They have a long vertebral column and the usual internal organs found in birds, but very greatly modified. For instance, there is not room enough in its narrow body for two well-developed lungs, and accordingly we find only one lung developed, and that one is extremely long displacing the other organs from their usual position in less narrow reptiles. Here is a list of our reptiles. See how many of them can be found in your school section. Perhaps you may discover one not on the list, and thus have the credit of enlarging it:

CLASS, REPTILIA.

ORDER I. TURTLES.

1. *Wood Turtle*—Shell keeled, lives in woods, rare.
2. *Painted Turtle*—Sometimes called the Mud Turtle, about eight inches long, and common.
3. *Snapping Turtle*—Larger, two feet in length, abundant about water.

ORDER II. SNAKES.

1. *Ringnecked Snake*—A yellow ring two scales wide around its neck; back, blue black; belly, bright pale orange; rare.
2. *Grass Snake*—Of a beautiful grass green color, common.
3. *Black Snake*—Back black, below greenish; four or five feet long sometimes; not common.
4. *Common Garter Snake* or *Striped Snake*—Our most common species.
5. *Red-bellied Snake*—Three pale blotches at back of its head; below red salmon color, above greyish.

These snakes have very dilatable jaws, but have no poison fang. They have teeth, however; and a snake's bite, if not treated carefully by washing thoroughly in clean water for instance, might cause some form of blood poisoning, as the bite of other not specially venomous animals might do. I have seen a scholar with the skin on the back of the fingers pretty well lacerated by a vicious garter snake which he was teasing. Washed well with warm water and bound up it healed as soon as scratches of any other origin. Of course snakes have no stings. Poisonous American snakes belong to two families, namely, the Harlequin or Bead snake, with a permanently erect and perforated poison fang, and the Rattle snakes with perforated fang which erect themselves at the instant of striking.

We must leave our frogs and salamanders for the next occasion. Most interesting creatures they are. Every pond has eggs of one species or other in jelly-like masses, in jelly-like strings or in jelly-like specks on objects in the water. The Batrachians are interesting on account of their double life, adapted at one time to water, at another to land. Study the development of these eggs by observing them in the pools, and by transferring them to jars with some moss and a daily change of water from a similar pool. We shall have something to say about them next month.

PLANT LIFE.

No. III.—SPRING FLOWERS.

A friend has sent me a violet which he found in bloom on the 24th of April near Clifton, N. B. "One poor lone specimen, the first of the season." This is one of the most modest and beautiful of the violet family—*Viola Selkirkii*, or Selkirk's Violet. This "lone specimen" is scarcely more than an inch high, but its brilliant green, heart-shaped leaves, its pale blue flowers, make it a welcome visitor—a harbinger of those delicate spring flowers which, by their beauty, tempt us into lanes and paths, promising delightful rambles in the warm spring days just coming.

The early spring plants invite us to study them. The flowers are more fragrant, more beautiful and more easily studied than those that appear later in the season. Almost as soon as the "pussy" willows have put forth their flowers, or the alders have hung their pendulous, graceful catkins over the brook, the Mayflower,

"The gem of April's robe—sweet Epigaea," is in bloom, perhaps beside some snow bank. In the last days of April I wandered in the woods to one of my chosen retreats. They had been blooming, I was told, during nearly all April, but I was not prepared

for the abundance of bloom and the richness of coloring that met my eyes. And how perfect was the picture that I first saw to tempt me further! Underneath a clump of evergreens was a little moss covered mound not a foot high, and peeping out all over it through the moss was *Epigaea*, from white to every shade of pink that it delights in. No wonder that poets sing its praises over and over again.

The other afternoon a pretty large parcel was handed to me through the post office window. I knew it at once and where it came from—the annual offering of Mayflowers from an old friend with whom I have enjoyed many a delightful botanical ramble. And he had put them up just as nature would have them put up—not in bouquets clipped of every leaf—but with their trailing, leafy stems, buried in moss, half concealing but adding a richness to their bloom.

The last week in April the leaves of the Adder's Tongue were just peeping above ground, and a strawberry blossom or two occupied a sunny spot on the sheltered side of a bank.

For the REVIEW.]

Astronomical Notes.

VENUS.

"Never above the horizon for much more than three hours after sunset," say the text-books about Venus, and some of them leave out the "much."

Some of the pupils in one of our schools challenged this statement about a fortnight ago. They were told to settle the matter for themselves by making careful observations of both sun and Venus on the first clear evening. They did so, and reported that Venus was in sight for a little more than four hours after the sun had disappeared. Faith in the infallibility of text-books has suffered a sad shock in the minds of these pupils—the younger ones especially, for the others had little faith of this sort to shake.

The same subject of Venus's long continuance above the horizon at night has been engaging the attention of others lately. Here comes a post-card asking the following questions about it:

1. What are the conditions under which Venus sets at the latest possible hour?
2. What is that hour in this latitude?
3. How near to the maximum time does Venus approach at its greatest eastern elongation at this time.

Venus sets latest at night when (a) she passes the meridian at the latest possible hour in the afternoon, and when (b) she takes the longest possible time to drop down from her meridian altitude to the western horizon.

Condition (a) occurs at or very near the time of her greatest eastern elongation from the sun, and the hour of meridian passage is then always close upon 3 p. m. mean time at any place whatever on the face of the earth. The very greatest value of greatest elongation cannot, in the present state of the orbits of Venus and the earth, occur at a time consistent

with condition (b), and the latest hour of meridian passage that is consistent with that condition cannot very well be much later than 3.10 p. m.

Condition (b) occurs, in the northern hemisphere, when Venus is at her greatest possible northern declination. The greatest value of this that is consistent with condition (a) is about 27° , and this, in latitude 45° N., allows her eight hours and six minutes between the time of passing the meridian and the time of setting.

Any one who can put two and two together can find from this an answer to question two. But let it be distinctly understood that the values given above pretend to be nothing but what an astronomer would call rough approximations. To give anything like an exact answer to the second question would involve a tangled mass of mathematical work, requiring more time than a Nova Scotian teacher has to spare at the end of April.

Just at present Venus stays up to about as late an hour as she is ever allowed, later than at any time since May, 1884, and even a few minutes later than then. Her greatest elongation occurred at one this morning (April 30). The elongation is not the greatest possible—indeed it lacks nearly a degree of its mean value—but the high northern declination that accompanies it throws the time of meridian passage nearly as late in the afternoon as it can fall. For the week beginning May 6th, it happens at nine minutes past three, mean time. On the 6th the declination is $26^\circ 54'$ N., and in N. Lat. 45° . This gives Venus a few minutes more than eight hours to climb down from the meridian to the horizon. So, for about a week at this time, Venus does not set in the latitude of St. John until 11.15 M. T. In latitude 44° she goes down five minutes earlier, in 46° five minutes later. In Scotland she is still above the horizon at midnight. A hundred and fifty miles north of St. Petersburg she does not set at all.

She will not be out so late at night again until we give up using one and eight as often as we now do. Some people would say that this means until next century, but it does not.

At greatest elongation Venus looks like a half-moon in the telescope. How small a telescope will show the phase I don't know, perhaps some of the readers of the REVIEW can tell me. A magnifying power of forty on a rather poor two-inch object-glass shows it easily, and sometimes a power of twenty will do it. As the half-moon phase wanes down to a quarter and then thins off to a still slimmer and prettier crescent, the planet is coming nearer and showing up larger, and the opportunity of getting a sight of the phase is growing better and better. Whatever glasses you may have, try them on it, and if you succeed, be good enough to send me a note of the date, the size of your object-glass and your magnifying power. If you don't succeed one week you may console yourselves with the thought that you stand a better chance next week; and if you don't succeed at all, you will at least have learned what kind of a glass will *not* show Venus's phases. The best time to make these observations is *before* sunset.

Another kind of observation can only be made after sunset, and is best made as late at night as possible, but not so late that Venus has got too low down. The moon should

be out of the way too, and the observer as far away as possible from the glare of electric and other street and house-lights. Given these conditions, or the nearest possible approximation to them, try if you can see the shadow cast by Venus. All the books say the thing is a fact, just as they say that at times it is possible for a keen eye to see Venus at noon. As to the last, it must be a very poor eye that can't see Venus at noon as she is now; in fact there has been, and there will be, nothing to prevent an eye of average quality from seeing her then on any clear day this year except for about a fortnight in July, provided that the observer knows where to look for her. The shadow business is another matter. It is a fact all right; it forced itself on my notice once, many years ago, before I had heard or read of it. But, so far as my experience goes, it is not at all so common and every-day an occurrence as Venus's visibility at noon. Since it asked me to look at it on that one long-ago occasion, I have seen it only once, and then I walked out into the country and asked it to show itself on a snow bank. It did.

It is, of course, when Venus is brightest that the shadow is most easily seen. Though greatest elongation is past and she is now working her way in towards the sun, and though less than half of her disc is lit up for us, she has not yet reached her best as a splendid evening spectacle. Her brilliancy continues to increase for five weeks after she begins her inward swing. It will be greatest this year on June 2nd, at which time the telescope will show her, looking much as the May moon will look on the evening of the 30th. When she is near the moon on the 28th and 29th, there will be a particularly good opportunity to have an all-day-long look at her—if the weather permits.

* * * * *

The twenty-six hour moon on the evening of April 27th was a beauty. More beautiful, and a rarer sight, will be the eighteen hour one on May 26th. For time and place, look half-an-hour or less after sunset and near the spot where Venus was on the previous evening about half an hour before she set.

If anyone has not yet seen Uranus with the naked eye, try during the moonless nights of this month. The first faint eye-speck to the north and west of Lambda Virginis.

Saturn watchers will notice a change in his habits during this month.

Mars is fine now between midnight and sunrise. Jupiter is easy between three and sunrise. Mercury is nearly ready for some early-riser to catch. He will be quite ready before the middle of the month, and should then be kept in sight until June 10th at least.

The last week or two has been a fine time for sunspots and auroras.

Yarmouth, N. S., April 30th, 1892.

A. CAMERON.

P. S.—If you get this before sunset on May 11th, try if you can see the nearly totally eclipsed moon rising between E. and S. E. before the sun goes out of sight.

A. C.

"Columbian Day," the 12th of October next, the 400th anniversary of the discovery of America, will be observed in the schools of the United States by appropriate exercises. Is not Canada interested also in this day?

For the REVIEW.]

Notes for Teaching Music by the Tonic Sol-fa Notation.

TWENTIETH PAPER.

In teaching the **THIRD STEP**, some trouble may be caused by the *fah*. One lesson or even two may be profitably given to it. The interest of the class can be kept up by presenting the new tone in as many ways as possible.

1. Revise the character of the five tones already taught, more particularly of the two leaning tones *ray* and *te*. The class should readily recognize when heard the three tones of the first step, and should also be familiar with the two new tones introduced in the second step. Sing to figures a phrase introducing *fah*, as the last tone, or next to the last, and ask to which number a new tone was sung. The teacher may make the new tone a little more emphatic at first. Sing a number of phrases to figures or to the syllable *laa*, and ask the children to attend to the one thing,—to find out which is the new tone:

d s m f. d r f m. s m d f. s r f m.

2. Next bring before the class, the wierd, desolate, awe-inspiring nature of the new tone. In doing this tell the class where the new tone is in the phrase sung to figures or to *laa*. Ask would the new tone better suggest a bright, clear day, or a dark, gloomy day? Is it a joyous, all right sound, or a somewhat sad and disappointed sound? Or still better it will be if the pupils can tell what it suggests to their minds:

d t₁ d f. f f t₁ d f m. s r f m. d r m f.

3. Next contrast this tone with the bright *s*, the rousing *r*, the calm *m*, by exchanging these for it in the same phrase:

1 | *s : m* | *d : m* | *s : —* || 2 | *f : m* | *d : m* | *f : —* ||
3 | *d : t₁* | *d : f* | *f : —* || 4 | *d : t₁* | *d : r* | *r : —* ||

4. The pupils may next be asked to try to find out between which of the tones this new tone lies, and when this is discovered its name may be given—and its position indicated on the second step modulator.

5. Bring out the leaning tendency of the *fah*. The pupils will feel that it does not make a good ending like *d*, *m*, or *s*, and so that the ear demands another tone after it. When they have felt that it is much more satisfactory to go down from *f* to *m*, than to rise to *s*, the name may be printed on the modulator in italics to indicate its leaning character:

| *d : m* | *f : f* | *s : —* || | *d : m* | *f : f* | *m : —* ||

6. Let the pupils discover *f*, when heard at a low pitch, and feel its effect:

Key A and key E. | *d : t₁* | *d : r* | *d : f₁* | *f₁ : m₁* ||

7. Next let the teacher sing, a number of simple phrases while pointing them on the modulator, and get the class and individual pupils to sing these after his pattern. Then have these sung by the pupils from the teacher's manual signs, but still after the pattern, and require the pupils to make the signs while singing. The manual sign for *fah* is the fore-finger pointing downwards, indicating that this tone seeks *m* after it as *t* seeks *d'* after it:

d m s s f m, s f m f s, m s f m r d,
d r m f s f m, d r j m s f m, d t, d r m f f m.

8. Give the pupils a number of the phrases they have already sung, but now without pattern; simply point them on the modulator or make the manual signs. It is well in these exercises to require the pupils also to make the signs.

9. Write some of these phrases on the blackboard, first without time and accent marks, and after with these, and get them sung to the notes, and after to the open syllable *laa*.

10. The teacher may now teach some simple school song that has any of the tones of the scale except the sixth, which has not yet been taught: or such a tune as Moravia.

11. Next teach by pattern some of the more difficult intervals, *r f*, *f r*, *d f*, *s f*, etc. After teaching one introduce the interval several times in a modulator voluntary before taking another. These intervals should be taught in phrases thus:

d r m f m r f m, s f m r f r m d.

Such a tune as Mozart may now be taught from pattern, though the tone *l*, which has not been learned, appears once in it.

The tone *lah*, the weeping tone, with manual sign all the fingers hanging, may be taught similarly.

After the pupils can recognize the new tone *lah*, have learned its mental effect, its leaning tendency to *s*, its place in the scale, and its name, the teacher should next let the pupils hear the *f* and *l* in their chordal connection. These two tones with *d* form the third chord *f l d*, the chord with *d* as its fifth, as the chord *d m s* is the chord with *d* as its root. The teacher should drill the pupils in the three chords. As the practice in the leaning tones should not be confined to stepwise progression, so in chordal exercises the exercise should not be confined to the *soh*, and *fah* chords, but should be varied stepwise progression. If they are confined to these the exercises become puzzling and will be found difficult even for advanced pupils. These chords resemble the *doh* chord and so lose their individual character, and the mental effects of the tones are lost sight of when their key relationship becomes obscure.

JAMES ANDERSON.

For the Review.]

Social Aspect of the Kindergarten.

What is the object of education?

Dr. Hailman says "That the object of education is the development of new independent individuality, fitted for life and society, capable of happiness, and efficient for usefulness, on the basis of morality and reason."

Or, in other words, its object is to prepare men and women for useful lives, to be pure, honest and truthful.

If education has aimed so high, should we not try as early as possible to educate the child for this end?

It has been said that the child's education must begin in the cradle. It is the mother who should give the child its first ideas of those laws, in accordance with which he must live, to insure a happy and useful life, none of which are more important than those dealing with his relation to others. From her he should learn that he is one of a universal brotherhood, should be shown that he stands as does everyone in a middle position—above some, below others—that he can give to the one, accept from others, and that he is necessary to both as both are necessary to him.

Father, mother and child form the first community, and the family is the first link in the chain of humanity. But as the child grows older, he finds the home insufficient, he longs for the companionship of children of his own age. Left to himself he forms habits, such as selfishness, love of teasing, and destructiveness, which if left unchecked would prevent him becoming a useful and happy member of society.

He needs to be introduced into a larger circle, where he will meet numbers of children of his own age. Here the kindergarten steps in and supplies the need, and here the child learns, without detriment to his individuality, that his little self is only part and parcel of the universe, and he may give of himself to it.

The kindergarten has also advantages over the primary school. In the primary school there is generally a large number of children, and the teacher cannot give sufficient attention to each child. The work given is in many cases far above their capacity, and being for this reason uninteresting the little ones not only get tired but gradually acquire a dislike for study.

This may not always be the teacher's fault, for there is generally a certain amount of work to be gone through in a stated time, and the teacher must try to force so much knowledge into the children that they may pass the required examination. But because of a smaller number the kindergartner can

pay attention to each individual child. Here the child is always engaged in useful work, suited to his age and capacity; prizes are never offered for successful work, nor punishment for failure.

The natural love for games is here taken advantage of, so as to cause a healthy development of the moral nature, the physical powers, the imagination, etc.; and a love of nature and all forms of beauty is here stimulated and encouraged.

Great importance is attached to the development of the hand in the kindergarten, not only in the gifts and occupations, but in the games and finger plays, for the hand is to be such an important factor in the future when the child is striving to earn his own livelihood.

Great accuracy is taught in the kindergarten. The tables are cut into one-inch squares and the child is taught to build his blocks and other material upon them—the foundation of accuracy in thought, word and deed. The games, gymnastics, songs and stories of the kindergarten all tend to teach the child impressively and clearly the helpful influence of common purpose of labor, of unity of interest and action, or in other words, it educates the child to be a part of the world.

In the kindergarten, hurry and rush which are so destructive to education are unknown. A consideration for others and a regard for their rights, is a lesson which the kindergarten endeavors to impress upon the children.

The circle in the kindergarten is a miniature world, where one unruly member can spoil the pleasure of all, where the greatest good comes from the participation of all. Here the child learns that he is one of many, as he can learn it nowhere else. While he has opportunity, at times, to exercise his individuality by choosing his favorite games, yet he has oftener to play the games chosen by others, and here first learns the lesson of unselfish enjoyment of other's joys.

Here by personal example and by various other means the child is trained in politeness, pleasant address, gentle speech, and kindness to others, all of which are of so much importance in his later social life.

The quiet waiting "to hear the clock tick," while the eyes are bright with pleasure, the moment of stillness before the new game follows the old, the quiet waiting while a word of thanks is offered before generous hands distribute the lunch, all hold the spirit of the kindergarten through the spirit of the children.

The kindergartner encourages generous impulses by noticing the first indications of them. The child

loves to have his efforts recognized, even if by his own companions; how much more would he appreciate it from his teacher if she is also his loving friend.

In the various ways above mentioned the kindergarten seeks to produce law-abiding children, children who are orderly in thought, feeling and action, who enjoy "the feelings of liberty, because license is far from them, and children who are planting a high parenthood, a pure citizenship and an exalted manhood."

ETTIE DEWOLFE.

For the REVIEW.]

Practical Chemistry in a Country School.

Although these notes will be quite unnecessary to any teacher who has studied with Mr. Brittain, I trust that they will be of benefit to some one about to begin chemistry with grades VII. and VIII.

The first thing required is a tray which may be removed when the lesson is over. My boys made them for every pupil out of light packing boxes. The trays are as wide as the desks and proportionably long; the sides from two to three inches deep, rising higher at the ends where handles are whittled out. Two little blocks must be placed under the front corners of the tray to make it level.

Each tray is fitted with a little box to hold litmus paper, stirring rod, matches, etc.; a few two-inch squares of window glass, and two or three little dishes (exaggerated butter plates or sauce dishes provided by the pupils), should be in front of the box. Each tray has two of the little glass-stoppered bottles in which perfume comes, filled with HCl and H_2SO_4 . A pound of each acid costing twenty cents will last for a long time. The place of honor in the tray is held by the pneumatic trough. These are furnished by J. M. Wiley, druggist in Fredericton, for forty cents, but we made our own out of deep tin cake pans with a shelf of tin or zinc. Pan and tray should both be painted to prevent rust. With the trough goes a rubber delivery tube costing thirty cents per yard. A yard is enough for two trays. The end of the tube is passed up through the hole in the shelf and held in place by a good sized pin or a slender darning needle. The generating bottle is a wide-mouthed bottle costing ten cents, its cork pierced by two tubes. Other necessary apparatus, ignition tubes at 10 cents, test tubes at 5 cents, etc., can be obtained of any druggist. The chief expense is the alcohol lamp and its fuel, but so far I have managed to do with only one. Chemistry lesson comes just after recess. I began to prepare oxygen and the gas was coming freely at the beginning of the lesson. Then a bottlefull was collected for every tray and the ex-

periments began. My pupils have prepared various oxides, H, NaCl, H₂SO₃, HPO₃, K₂O, KOH, and have learned the receipt for an acid, a base, and a salt.

To any teacher just taking up this subject I would say, "Read the REVIEW'S chemistry lessons, borrow the chemistry notes taken at Normal School last year from some other teacher, get a good work on chemistry, experiment a little in private and then go ahead," only to find that your work will increase its fascination with every lesson.

John M. Wiley, of Fredericton, furnishes all chemical supplies. I feel sure that two dollars will buy all the chemicals and apparatus (exclusive of trays and troughs) necessary to make a start in this most delightful study. Pickle bottles are very handy, and so are the wide-mouthed bottles in which English preserves are put up. Ask your pupils to bring any odd bottles they may have. KAYE.

For the REVIEW.]

Farewell Words.

Teachers of District No. 10, N. S.:

At the close of six years of Inspectoral work among you, I wish to say a few words of farewell.

I believe those six years to have been of somewhat mutual benefit. I have received many hints on teaching that will be useful to me in my future work, and, in the majority of cases, I have noted steady progress in you.

Do not be satisfied with past attainments. Strive to get a higher license, that your greater breadth of knowledge may be of direct benefit to yourselves and your pupils, and that you may keep pace with the progress of the time in which you live.

Add to your professional experience by attendance at the Normal School, if possible, at Teachers' Institutes, and by reading. To this end patronize the REVIEW, which you in this district have so well sustained in the past. If it does not deal with the school work in which you may more particularly need instruction, write to the editor, Mr. McKay, and I am confident he will see to it that required information will be given.

Always join with the Inspector, whom I commend to your sympathy, in his efforts to secure comfortable school-rooms and proper apparatus. Do not be induced to agree with trustees when they seem inclined to think his requests not absolutely necessary, and can be put off for a time.

Above all, keep before you the true teaching we have been aiming at, not so much the getting of knowledge, as gaining the power to acquire it for one's selves, not the storing of facts, but cultivating the power to think and investigate.

Teach the pupils to walk with all the senses on the alert, seeing the world around them, hearing its lessons, with sensitiveness to receive their impress, and firmness to retain it, both in mind and character.

Have patience, be of good courage,—you will be repaid in proportion as your patience and perseverance fail not.

In conclusion I have to ask your forgiveness where patience and kindness on my part may not have been shown to seeming failures, of which I, perhaps, did not know the true cause.

If I did not always display the kindness I should, it was never absent, and now, in saying farewell, is the uppermost feeling in my mind towards you.

Wishing you success in your work and promotion in your profession, I shall always remain your sincere friend.

E. J. LAY.

Amherst, May 1st, 1892.

For the REVIEW.]

Psychology for Teachers.

PROF. SETH, DALHOUSIE UNIVERSITY, HALIFAX.

LECTURE IV.

APPERCEPTION.

Apperception may be called the art of the mental life.

Locke compares the mind to a blank tablet, which is written on by experience. He also compares it to a dark room, which receives light through the windows, *i. e.*, the senses.

These two comparisons suppose the mind to be merely receiving, therefore passive, whereas in reality the mind is active even in receiving the data of experience.

To acquire knowledge we must react upon the data given. The mind may be called an organism, and as the physical organism grows when it assimilates into itself the food that it receives, so the mind grows as it assimilates the data of experience. By merely receiving it would not grow, to do this it must also assimilate.

Wherein consists mental activity? Kant says in synthesis or combination; thus the mind produces knowledge. This mental organism synthesizes the foods received as the physical organism does, makes it an integral part of itself, one of its elements. This act of assimilation on the part of the mind is the act of apperception.

Leibnitz invented this word, but used it merely as distinguished from perception.

Apperception is that synthetic or relating activity by which the mind constructs objects out of the data presented and re-presented in consciousness, *i. e.*,

what is given to the mind is not the object readymade but the data. True, the object is presented readymade and the mind knows that object, but the mind did not always know it. What would the undeveloped infant mind think of an object, a table for instance? It would certainly have sensations, but these sensations would not form an object. The sensations of shape, color, touch, etc., would be there, but in a vague undefined way. We feel the same sensations, but we know that these sensations are produced by a certain object which we call table.

The point is that the mind performs the operation of resolving sensations into the object which produced them. True the qualities of the object are combined already in the object itself, but in the knowledge of the object I must combine them. Originally the child cannot do this. We cannot remember when we could not combine objects into the qualities which they compose, but as we know that we must have learned to walk, etc., so we suppose that we must also have learned to combine our knowledge of the qualities of objects into the knowledge of the objects which they compose.

To the child the material world is a mass of sensations. It is necessary out of this mass to construct objects. The child-mind must learn to break up the mass and group it around nuclei. In the apperception of any object instead of a blur of sensations I have an object.

We must distinguish sensation from perception. Sensation is indefinite, perception is definite. Did we not perceive we could not apperceive? I receive a sensation; I identify it by perception.

There is a connection between apperception and attention. To apperceive I must attend, for I must select a centre or nucleus of the sensational mass and gather around it other sensations. This is to attend, to gather in the diffuse consciousness and fix it on a point. This point or focus is apperception. Attention is the secret of apperception; apperception is the secret of the whole mental life.

Apperception is related to feeling and willing as well as to knowing.

How do we feel pleasure or pain? It is determined by the central point of view we adopt. This central point gives up feelings of joy or the reverse according to our individual mental state. What gives me pleasure may give you pain and vice versa.

In reading a book we have some central pleasure, central interest. In speaking to you of a subject I have in view some central end or purpose, and to that tend all my words, the sentences I form, etc. All the elements of my discourse are dominated by that central idea for which they are all employed.

The centre of all mental life, knowledge, volition or emotion is apperception. There is always an apperceptive point and that is the focus of all mental operations. Round this focus the mental life gathers in circles.

We distinguish then two classes, or rather phases, of apperception; the one by which a new idea on entering into the mind is assimilated therein and becomes a part of an individual mental state, the other by which an idea already in the mind becomes a focus round which sensations are grouped.

The mind may be compared to a house where the ego, or individuality of a certain mental state, reigns as mistress. A knock comes at the door of this mental dwelling, in the shape of a sensation; perception recognizes the visitor which thus becomes a percept, but to apperception it belongs to usher the visitor into the mental abode and make it part of that individual mental state.

Apperception, therefore, is of great value in education. Do not overcrowd the child-minds entrusted to you with a mass of facts, but see that these facts are assimilated and made part of the mental state of each pupil. We read of James I. of England that his mind was overcrowded with matter which he was unable to digest, and so instead of becoming a wise and enlightened king he developed into a vain and narrow-minded pedant.

His tutor unfortunately did not train his apperceptive powers and have each morsel of mental food assimilated before introducing new intellectual viands.

Teachers should bend all their efforts to cause each new piece of information to be not only listened to and committed to memory by the child, but to become a part of his mental state, for, as the material body cannot grow without assimilating the nourishment it receives, so of all diseases of the mind none is worse than mental indigestion.

The City of Genoa is going to solemnize the fourth centenary of the discovery made by its great citizen, Christopher Columbus, by an international congress of geography and natural science, to be held in Genoa from the 4th to the 11th of September. The congress is to be held under the auspices of the Genoa Botanical Society.

Death has removed the Hon. Alex. MacKenzie, one of the foremost men of the liberal party of Canada. His name is a synonym for honesty and integrity, and men of all shades of political opinion have united in testifying their respect to his worth. His career offers an instructive example to Canadian boys. Born in Scotland, he received an ordinary school education. At fourteen years of age he began to learn the trade of stonemason. At twenty he came to Canada, and rose from one position to another until he became premier of the Dominion, which he held from 1873 to 1878.

Arbor Day.

During the past month we have received several reminders of the approach of Arbor Day in the way of circulars and pamphlets suggesting proper exercises for the ceremonial observance of that festival. They are generally issued by the State Superintendents of Public Schools, and contain a good deal of music and poetry, with selections in prose and verse suitable for recitation. Every effort to make this celebration an attractive one is praiseworthy, but in addition to the songs and orations we should like to see in these programmes greater effort to instruct the young people in some of the advantages and uses of trees, some of the fundamental facts relating to their growth and structure, and particularly some explicit directions as to planting them and caring for them afterward. Arbor Day is intended to encourage tree-planting. Its highest use is only reached when children, and their parents, too, are moved to plant the best trees in the best way. It requires no great amount of intelligence to thrust the roots of a tree into a hole in the ground; but to plant a tree as it should be planted—that is, to plant it so that it is likely to attain its best possible development and reach a green old age—is a work that requires care and skill. There are few things which men do where the difference between careless work and good work will show so plainly, or for so long a time, as in the planting of a tree. In the first place, the site for planting should be intelligently chosen, then the variety suited to the peculiar soil and situation and use for which it is intended should be considered. A good specimen of this particular tree should be selected and the ground should be thoroughly prepared to receive it. Even then, after the soil is properly firmed about its roots, the tree should not be neglected and suffered to fall a prey to insects or fungi, or allowed to starve for lack of food or water, or to be loosened by the wind.

One of the most instructive exercises of Arbor Day in every district where the day was celebrated last year, or in the years before, would be an examination by the children of the trees which had previously been set out, to see what proportion of them were thrifty and had made as good a growth as could have been expected. Professor Beal once related a very instructive incident in these pages. A few years ago each class and society of the Michigan Agricultural College planted a memorial tree with some ceremony. These trees were publicly accepted by the President, and the care of them was guaranteed. A year later reports were made which proved how much easier it is to plant a tree than it is to give it proper care afterward. Of the twelve trees not one had made

satisfactory growth, none had been mulched, only one had received any cultivation, one was dead, two nearly dead, one had been cut down, and nearly all the rest of them were having a severe struggle with thin soil, grass, weeds, lack of moisture and insects and fungi.

It is a beautiful custom—this planting of memorial trees—but in order to make it impressive the trees must live to vigorous and venerable old age. A memorial tree of feeble growth and early decrepitude only serves to remind us that it was originally a bad specimen or that it had been badly planted or badly cared for. No excuse can ever be given for planting a tree carelessly or improperly. There may be particular reasons for planting trees closely together, as, for instance, where a rapid upward growth is desired, but for memorial trees ample room is needed.

It is outside of our purpose to repeat here the elementary rules for planting trees and for protecting them. What we wish to insist on is that attention to the trees themselves is the matter of paramount importance, while talking and singing of them are of temporary and comparatively trivial moment. Even under the best auspices one day in a year devoted to trees will count for very little. The real advantage from the observance of Arbor Day comes where it is made a pleasing incident in a perennial and ever-growing interest in the study of natural objects. Some of the state horticultural societies have done very wisely in offering to furnish seed and plants under certain restrictions to district schools, in order to encourage the cultivation of flowers and shrubs on school-grounds. Others have offered to school-children prizes for collections of wild flowers and for classified lists of the birds and insects found in their districts. In an Arbor Day circular from Wisconsin we find directions for making and keeping a lawn, which is an admirable idea where the grounds are so large that the whole area is not required for a playground. The essential point is to encourage among school-children a personal interest in trees and shrubs, not simply for their use in making the school-grounds an attractive place, but for the development of habits of observation, which is of itself a liberal education. The habits of investigation which distinguish a man of science from his fellows are the very ones which are natural to young children, and which are too often repressed in schools, where they should be encouraged. Just now, when all nature is quickened with new life and when the beauty and melody and fragrance of spring are appealing to our awakened senses, every child is eager to respond to the invitation from the woods and fields. The most fascinating objects for study abound by every wayside and in every thicket, and all the alert young faculties need is proper direction and encouragement.—*Garden and Forest, April 13.*

N. S. EDUCATIONAL REPORT.

The annual report of Dr. MacKay, Superintendent of Education for Nova Scotia, for the school year ending 31st Oct., 1891, has just been published. As Supt. MacKay entered upon his duties on the 1st of Nov., 1891, the report, of course, refers entirely to the work of the school year preceding that date.

Some comparisons between corresponding years of the last two decades will be instructive :

	1881.	1891.	
School sections in the Province.....	1,799	1,908	109 increase
No. of sections without schools.....	128	87	41 decrease
Total No. of different pupils.....	98,148	101,724	3,576 increase
Proportion of population in school....(1 in 3.9) (1 in 4.3)			a decrease
Percentage of pupils daily present....	53.2	56.8	3.6 increase
No. of Academic teachers.....	18	44	16 increase
No. of Grade B male teachers.....	261	170	91 decrease
" " B female.....	51	150	99 increase
" " C male.....	245	203	42 decrease
" " C female.....	543	816	273 increase
" " D male.....	213	155	58 decrease
" " D female.....	447	596	149 increase
Total No. of male teachers.....	746	572	174 decrease
" " female.....	1,042	1,568	526 increase
No. of teachers in same section.....	929	1,094	165 increase
" " removed to another sect	522	775	193 increase
No. of new teachers.....	277	271	6 decrease
Govt. expenditure on common schools..\$ 738.99	\$ 820.00	\$ 92.01	increase
" " Academies.....	54.57	141.23	86.66 increase
Total Govt. exp. for public schools....	1,705.93	2,009.02	303.08 increase
" " education.....	1,846.27	2,139.05	292.78 increase
Total expenditure for education.....	5,713.89	7,252.84	1,538.95 increase

Note 1. The number of school sections in the Province has increased over 5 per cent. Does that mean a breaking up and weakening of sections existing in 1881? The tendency should be towards consolidation.

2. An increase in ten years of only 3,576 in the number of enrolled pupils does not indicate much growth in population.

3. The great improvement in secondary education, due to the late superintendent's wise measures, is partly indicated by the employment of sixteen additional academic teachers and an increase in the expenditure of from \$5,457 in 1881 to \$14,123 in 1891.

The real improvement, however, in this department has been much greater than these figures would seem to show. In thoroughness of work and classification the county academies are all that could be expected, and almost all that could be wished.

4. The number of male teachers has decreased very largely.

5. The bad habit of changing teachers every six months seems to be on the increase. It is to be hoped that the one-year term will check this evil.

6. While the population of the province has increased only 3 per cent, the expenditure for education has increased 30 per cent., showing very satisfactory growth of public interest in education and a general increase of wealth to support it.

	1881.	1891.	
Average salary to male teachers of Grades A and B.....	\$306	\$448	\$48 increase.
" " Male, Grade C.....	266	280	6 decrease.
" " Female, Grade A & B,	293	286	7 decrease.
" " " " C.....	223	223	

In New Brunswick the salaries of the higher grades will average \$50 more than in Nova Scotia.

Antigonish is the only county showing a school in operation in every school section. Pictou has the largest number of sections without a school.

Cumberland has the largest proportion of population at school and Richmond the smallest.

The following table shows the proportion of academic to common school pupils in each county: Antigonish 1 in 19, Pictou 1 in 24, Colchester 1 in 28, Halifax 1 in 33, Queens 1 in 34, Yarmouth 1 in 40, Victoria 1 in 45, Richmond 1 in 60, Shelburne 1 in 60, Cape Breton 1 in 70, Guysboro 1 in 73, Kings 1 in 75, Annapolis 1 in 80, Hants 1 in 90, Cumberland, Digby and Inverness each 1 in 100, and Lunenburg 1 in 115.

Halifax pays the highest average salary and Richmond the lowest.

Of licensed teachers Pictou supplied 70, Colchester including the Normal School 116, Halifax 60 and Kings 49.

The disparity which the report shows to exist in the various counties as to the willingness of the people to be taxed directly for education is very astonishing. *Per capita*, Halifax city contributes for ordinary expenses \$2.13 (including what corresponds to county grant), Kings \$1.48, Cumberland 98 cents, Yarmouth 93 cents, Colchester 74 cents, Hants 69 cents, Annapolis 67 cents, Pictou 66 cents, Shelburne 63 cents, Queens 58 cents, Lunenburg 57 cents, Halifax County 56 cents, Digby 56 cents, Cape Breton 54 cents, Guysboro 50 cents, Antigonish 40 cents, Victoria 37 cents, Inverness 27 cents, Richmond 27 cents.

EXTRACTS FROM REPORT.

It is not creditable to Nova Scotia that in the percentage of trained teachers in service she should stand lowest among the provinces of the Canadian Dominion. For this state of things no degree of responsibility attaches to the Normal School, attendance at which is purely voluntary and unaccompanied by any preferential recognition whatever. The easiest and cheapest road into the teaching profession is naturally chosen by the great majority of candidates. Recent improvements in our high school system and a natural and proper desire on the part of the Normal School faculty to emphasize the distinctly professional features of the work, have conspired to reduce the number of those seeking licenses under direct provincial auspices.—*Supt. MacKay.*

The Normal School could certainly send out more thoroughly trained teachers, if its academic functions were eliminated, and it were enabled to devote all its energies to professional work. The effectiveness of its special work would also be vastly promoted through the increased intelligence and mental maturity of its students, who, under the proposed conditions, would receive a more thorough academic training before being admitted to the Normal School.—*Prin. Calkin, Normal School.*

Additional extracts will be given in next issue.

TALKS WITH TEACHERS.

Have you ever had to deal with old teachers as trustees or parents? Few teachers have escaped the experience and many of them regret it. The teacher of twenty years ago is not apt to take a roseate view of the new-fangled notions of to-day, and is strongly of the opinion that there is something radically wrong, if not everything. If the old teacher is a trustee, he is very suspicious of modern apparatus; and if the new teacher is urgent, he is met with the rebuff that the trustee has taught and knows what is required, and in a case of that kind the persuasiveness of the inspector is usually required. This trustee is the determined foe of institutes, long vacations and high salaries. If the old teacher in question chances to be a parent, the new teacher has to resist a most resolute attempt at revision of the course of instruction. "There was no such thing thirty years ago, when such matters were much better regulated than at present." It is satisfactory to know that all old teachers are not so constituted. When they have kept step with the times their experience and sympathy are often of great assistance to the teacher of to-day, and in either case he should respect their prejudices as far as possible and be as lenient as he can.

Be neat and tidy as to your room, your desk and your personal appearance. Insist upon neatness on the part of your pupils as to their work, their desks and their appearance as far as possible. It is not the least important part of their education. An untidy teacher, however excellent her methods, never makes headway in her profession and never rightly impresses her pupils. Teachers, be neat—more depends upon it than perhaps you are aware of.

In the above connection induce the trustees, if you can, to clean the school-room often. How can tidiness be inculcated in a dirty, dusty room? Yet some of our most wide awake and progressive boards have their school-rooms cleaned but once a year. What would any of our thrifty housewives say to their room being cleaned but once a year where there is a large family of children? What shall we say, then, where there is a family of fifty or sixty?

See that your pupils are provided with small sponges or water bottles, or have the water basin for the purpose passed around at least twice each day.

In teaching writing see that your pupils are supplied with *good* pens. Examine them every week and have them all of the same kind. Keep the class together in its work in writing.

Of Educational Interest.

It is likely that there will be a large attendance from the Atlantic Provinces at the Dominion Educational Association at Montreal in July next. A cheap excursion is talked of by the North Shore, taking in the St. Lawrence to Quebec and Montreal, through Lake Champlain to Saratoga, allowing an opportunity to attend the National Educational Association, thence to Boston, and to St. John by steamer.

Dr. Inch, Chief Supt. of Education (N. B.), spent a few days in St. John in April. He visited some of the city schools. While he was in St. John a meeting of the local committee of the Provincial Teachers' Institute was held and arrangements made for the public meeting to be held in connection with it.

At a meeting of the St. John County Executive of the Teacher's Institute a provisional programme was arranged. It was decided that if satisfactory arrangements could be made that the meeting of the Institute should be held in St. Martins.

The famous Cook Co. Normal School, and its still more famous principal, Col. Parker, has lately come in for more than an ordinary share of criticism. A comparison of results has shown the work of the school to be inferior in a marked degree to that done in other schools of a similar character. The *Public School Journal* attributes the failure of the school to the principal, not to his assistants. It styles Col. Parker a disorganizer. Col. Parker has been sustained by a narrow majority. It may be stated that the judgment arrived at was through written examinations—a not always safe and accurate mode.

The *School Journal*, after lamenting that "the too general method of electing educational officers on party issues often turns good officers out just at the time when they are doing their best work," continues: "When an educational vacancy occurs in Brooklyn, or New York, is there any inquiry for one who has given signs of greatness in the schoolroom? No; from the superintendent down, a 'pull,' political or otherwise, is needed. This state of things precludes the entrance into the educational field of those who might possibly achieve some greatness." It rejoices, in conclusion, that the political superintendent's day in the schools (like the clergyman's) is nearly over.

Letters were lately sent to fifty of the most prominent citizens of State Michigan, asking their criticism upon the public school-work, and elicited the following opinions: The schools are not teaching morality, honesty, truthfulness, etc., as they should. They are taught too many studies, with a lack of thoroughness in the same. More attention should be given to physical culture. The qualifications of teachers are insufficient. There is a lack of manual training. There are too few men teachers. The practical side of life is lost sight of. Lack of adaptability to individual needs.

Much adverse criticism has lately been passed upon the courses of study in the New England grammar schools. It is now proposed to considerably lessen the time allotted

for arithmetic, geography and English grammar, in order to make room for natural history, physics, algebra, geometry, French, German and Latin. It is affirmed that this change will be not only to the advantage of those children whose education is not continued beyond the grammar school, but also of those who proceed to college.

University extension is still spreading in the States and Canada, and its supporters in England will learn with interest that, wherever it is connected with a chartered institution, it is empowered to grant educational degrees. But the movement is not without its enemies. "The people of the United States," they say, "have established the People's Free High and Normal School to do this very thing, and that it will probably require ten years' practice in lecturing and teaching, by the majority of these learned college 'experts,' to acquire the art of 'putting things' in any way comparable to our superior high school teachers, men and women, the instructors in the Normal schools and the Chautauqua lecturers. What the country needs, just now, is what so many of our college men do not or will not see: not so much university 'extension,' but university connection with the higher department of the people's common school." It is stated that in the extension experiments at Baltimore the negroes did better on the average than the white working men.

The Auckland Education Board have lately resolved that in future the duration of the holidays shall be uniform for all its schools. By this, a fortnight at Christmas is added to the holidays of those teachers that are located beyond "three miles from the office of the board." This would seem to be but justice, and yet only a year ago, when approached on the subject, the board would not treat the request seriously.

Swedish philanthropists have been making an attempt to teach their scholars the lesson that cleanliness is next to godliness. The chief parochial school in Stockholm has introduced winter bathing, but the experiment has been tried very cautiously at starting, a bath being provided once in every three weeks. The boys took kindly to the new element, but the girls were shy. Of forty girls in one class, averaging thirteen years of age, only sixteen had ever known the luxury of a bath in winter.

We know that in England country parsons and village schoolmasters are not always on the best of terms, but this antagonism is far more pronounced on the continent. In a village in the south of France the rector had reason to complain of the unpunctuality of the children of his catechism class. But the schoolmaster turned a deaf ear. At last the priest lost patience, and proceeded to the school, where he administered a blow to the unfortunate pedagogue which sent him reeling on the floor. The latter is now seeking redress from the civil authorities.

The committee of the Boston School Board have reported unanimously in favor of the following order: "That, after every ninth year of service in the schools of this city, teachers shall be entitled to a leave of absence of one year on half pay." Boston is also thinking of adding a "free University" to its system of public instruction, so that now, more than ever, will it be considered the schoolmasters' paradise.

SCHOOL AND COLLEGE.

The grammar school in Woodstock has raised \$100 for a school library.

Inspector Whelpley expects to do some of his work this summer on a cushioned tired safety bicycle.

Inspector Carter expects to visit St. John Co. east in May and the schools on the islands of Charlotte County in June.

At the invitation of the inspector the trustees of St. Stephen attended a meeting of the teachers called by him to discuss matters concerning the general interests of the schools. Many very useful suggestions were made by both trustees and teachers which cannot have any but a beneficial effect. It was felt by all that such combined meetings should be held more frequently in order that the trustees might arrive at a more correct estimate of the work of the schools and the teachers appreciate more clearly the wishes of the board.

St. Ann's College, situated at Ste-Marie, Digby, has received degree-conferring powers from the Nova Scotia Legislature. It is under the direction of the Eudist Fathers, is well equipped for carrying on classical, commercial and scientific courses. French and English are to receive equal attention.

M. S. Read, B. A. '91, Principal Wolfville Public Schools, has been seriously ill for several weeks. He is not as yet able to resume his duties, but his health is improving.

At the recent examinations at McGill University, Montreal, Miss Katharine Travis (Victoria High School, St. John, N.B.), first year student, made the following brilliant record: First rank honors and prize in mathematics; 1st rank general standing; prize in chemistry (second place); prize in Latin and Roman history (first place); prize in English; Coster Memorial prize; prize in French (second place); and the Donalds prize for physical culture. Major McIntosh (Prince of Wales College, P. E. I.), took first rank honors and prize in mathematics; 1st rank general standing; Coster Memorial prize.

BOOK REVIEWS.

OUTLINES OF LESSONS IN BOTANY, for the use of teachers or masters studying with their children. By Jane H. Newell. Part II, Flower and Fruit. Illustrated. Boston: Ginn & Co., 1892. We welcome the appearance of this little work, with its logical plan, its scientific execution, its excellent illustrations. It is decidedly a book of the new botany—it deals from the first with the plant as a living being adapted to its environment, not as an anatomical subject to be placed upon a table for dissection. It is intended primarily as a guide to teachers and others who must teach themselves, and it is admirably adapted to this end. It traces clearly the structure and development of flower and fruit as they unfold in common spring and summer plants, and the same illustrations are made to teach many interesting and valuable lessons about the life and use and reason for being of those parts. Everywhere in the work the effort is made to arouse and stimulate the observing powers, and in this it will be successful. Part I. of the work was published a few years

SOLL AND HABEN (Debit and Credit), a novel by Gustav Freytag. Edited with English notes and condensed from the original by Ida W. Bultmann, teacher of German in the Norwich Free Academy. Ginn & Co., Boston, publishers. This is recognized as one of the best of modern novels, and its peculiar interest to English readers lies in the contrasted pictures of high and low life in German society.

ago, and deals on similar lines with buds and branches. Nearly all of the plants described and figured are natives of the Maritime Provinces, and any of our teachers who are compelled to guide themselves in their botanical studies will find the book an invaluable assistant. The synopsis of the characters of sixty orders of flowering plants is a most valuable addition, and is not in print elsewhere in our language.

SELECTIONS FROM GOETHE'S POETICAL AND PROSE WORKS, with an introduction containing a Life of Goethe; for school and home, by Dr. Wilhelm Bernhardt. Cloth. Price \$1.60. D. C. Heath & Co., publishers, Boston. This book contains selections from Goethe's chief works, so selected, with notes and explanations, as to give quite an insight into the works of the German poet.

BOOKS RECEIVED.

A PRIMER OF ENGLISH VERSE, by Hiram Corson, LL. D. Boston: published by Ginn & Co.

INTRODUCTION TO CHEMICAL SCIENCE; LABORATORY MANUAL OF GENERAL CHEMISTRY, by R. P. Williams, M. A., Instructor in Chemistry, English High School, Boston. Ginn & Co., publishers, Boston.

FRENCH SCHOOLS THROUGH AMERICAN EYES, by Jas. Russell Parsons, Jr. C. W. Bardeen, publishers, Syracuse, N. Y.

Current Periodicals.

The *Atlantic Monthly* for May contains a valuable article on "The Present Requirements for Admission to Harvard College." . . . The opening article of the *New England Magazine* for May is a very seasonable one, and will recall bright, happy days to thousands of American travellers. It is "Village Life in Old England." The author, Reuben G. Thwaites, and the artist, Louis A. Holman, spent last summer in England, and the result is a very picturesque article—in the real sense of that abused word . . . In the *Popular Science Monthly* for May is an article containing some considerations as to Why we Should Teach Geology, by Prof. A. S. Packard. . . The *May Century* contains a portrait and a sketch No. 1 of Christopher Columbus by Emilio Castelar. . . Readers of "Quentin Durward" will find attraction and interest in Miss Fordham's article on "A Mediæval Stronghold" in the *May Wide Awake*, as it reproduces in description and picture a famous old French castle of that historic time. . . The numbers of *The Living Age* for April 16th and 23rd contain, among other excellent articles, The Road from Mashoonaland, and Private Life in France in the Fourteenth Century, *Fortnightly*; Recollections of Tewfik Pacha, and Napoleon the Third at Sedan, *Nineteenth Century*; Society in Naples, *National*; The Race Across the Atlantic, *Scottish*; Conversations and Correspondence with Thomas Carlyle, *Contemporary*; The New Star in the Milky Way, *Saturday Review*; Notes on Bird-Music, *Chambers'*; The Ancient Tombs and Burial Mounds of Japan, *Nature*; with "How She got Out of It," "Who Rang the Bell?" "Boomellen," and poetry.

SUMMER SCHOOL OF SCIENCE

FOR THE

ATLANTIC PROVINCES OF CANADA.

The Sixth Session of the School will be held in the City of St. John, beginning on **MONDAY, the First Day of August next**, and closing on Saturday, the 13th of August.

The opening will take place in the hall of the Centennial School. The Mayor of the city will preside, and the President, G. U. Hay, Principal of Victoria High School, will deliver the opening address. Among the other speakers will be Lieut. Gov. Sir S. L. Tilley, Chief Superintendent Dr. Inch, of New Brunswick; Dr. MacKay, Superintendent of Education for Nova Scotia; Premier Fielding, H. J. Thorne, Esq., and Hon. Judge King.

The staff of Instructors for the session is large and excellent, consisting of the following:

- ASTRONOMY—Principal Cameron, Yarmouth Academy.
- BOTANY—G. U. Hay, Ph. B. President of the school, assisted by Miss N. Forbes, A. B., Yarmouth Academy.
- CHEMISTRY—Prof. W. W. Andrews, Mount Allison, Sackville.
- DIDACTICS—Prof. Frank H. Eaton, Boston.
- ELOCUTION—Miss M. A. Alexander, St. John School of Music.
- ENGLISH LITERATURE—Principal A. Cameron, Yarmouth.
- GEOLOGY—Prof. A. E. Coldwell, Acadia College, Wolfville, and G. F. Matthew, A. M., F. R. S. C., St. John.
- HISTOLOGY and MICROSCOPY—Principal E. J. Lay, Amherst Academy.
- MINERALOGY—Prof. Coldwell, Acadia College.
- MUSIC (Tonic Sol-fa)—Miss A. F. Ryan, Halifax.
- PHYSICS—Principal E. MacKay, New Glasgow.
- PHYSIOLOGY—A. F. Emery, M. D., St. John.
- PSYCHOLOGY—J. B. Hall, Ph. D., Normal School, Truro.
- ZOOLOGY—Prof. J. Brittain, Normal School, Fredericton.

Lectures and class-room work will occupy each day from 9 to 1, except Saturday, the 6th of August, which is set apart for an excursion by steamer to some point on the St. John River, and Wednesday, the 10th of August, for an excursion to St. Martins or some other point of interest on the Bay of Fundy. Every afternoon will be devoted to out-door work, or rather out-door pleasure, such as visiting the Falls and the Narrows of the St. John River, Duck Cove, Lawlor's Lake, Parks & Sons' Cotton Factory, Clifton on the Kennebecasis, etc., etc. In fact the program of work and recreation is such that no one can fail to be benefited and refreshed. The unanimous verdict of those who attended last year's delightful session at Antigonish is that the two weeks spent there were the most pleasant and profitable of the year. Whether viewed as a holiday, as a reunion or as a place to acquire knowledge, each session of the school has been a grand success. **DON'T FAIL TO BE PRESENT.** You will find it the most delightful way imaginable of increasing your store of scientific knowledge, and you will have the privilege of free lectures from such men as Dr. MacKay, Dr. Inch, Principal Cameron and others.

Board can be obtained from \$3 per week and upwards; so that the whole expense, including travel and class-tickets, need not exceed \$15 or so. Reduced rates by all routes. Intercolonial Railway gives return tickets free, but be sure to get a certificate of purchase from the agent who sells you the ticket. This certificate, countersigned by the secretary of the school, will be accepted by the agent at St. John for a return ticket. Drop a postal card to the secretary for 30-page programme of work to be undertaken. For further information write to the local secretary, Enoch Thompson, West Side, St. John, or to the general secretary.

W. T. KENNEDY, Halifax Academy.

Look out for the June REVIEW, which will give additional particulars regarding Railway and Steamer tickets, excursions, etc., together with a list of private boarding houses in St. John, at which visitors may be accommodated.

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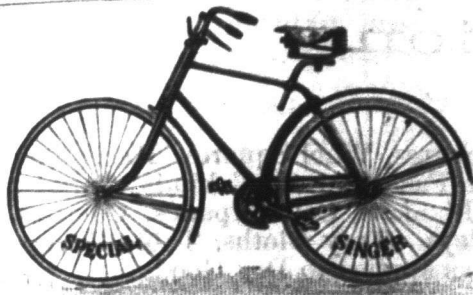
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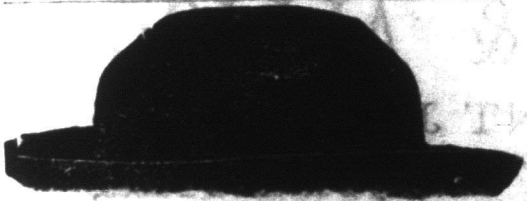
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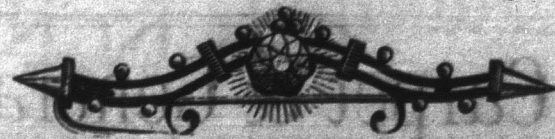
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**McGILL UNIVERSITY,
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The Calendar for the Session of 1891-2 contains information respecting conditions of Entrance, Course of Study Degrees, etc., in the several Faculties and Departments of the University, as follows:—

FACULTY OF ARTS—(Opening September 14th, 1891.)

DONALDA SPECIAL COURSE FOR WOMEN—(September 14th.)

FACULTY OF APPLIED SCIENCE—Civil Engineering, Mechanical Engineering,
Mining Engineering, Electrical Engineering and Practical Chemistry—(September 15).

FACULTY OF MEDICINE—(October 1st).

FACULTY OF LAW—(September 7th).

FACULTY OF COMPARATIVE MEDICINE AND VETERINARY SCIENCE—
(October 1st).

McGILL NORMAL SCHOOL—(September 1st).

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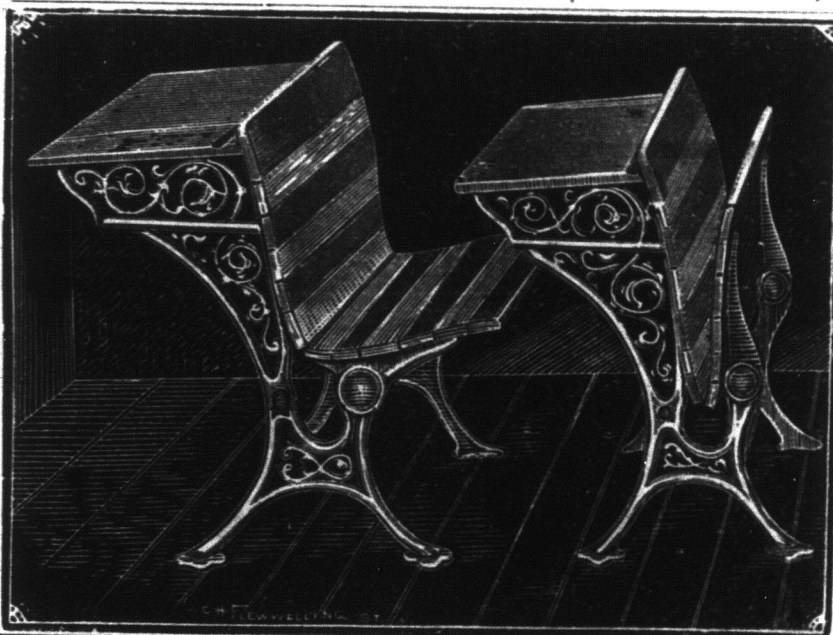
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