

PAGES

MISSING

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THE
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THE EDUCATIONAL REVIEW.

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THE 11th of May is Arbor Day for Nova Scotia.

TEACHERS and schools may help in the excellent work that the Botanical Club of Canada is attempting to do—in noting and keeping records of the first appearance of flowers and of birds in their locality, and in sundry such reports to the different secretaries of the counties in the Atlantic Provinces.

INSPECTOR CARTER has appointed Friday, May 18th, as Arbor Day for the schools in his district (No. 4). As the 18th is a holiday in the schools of the city of Saint John it is probable that the Chief Superintendent will sanction May 17th for the observance of the day in that city.

A NUMBER of answers for Question Department, unavoidably crowded out, will appear next month.

WANTED: No. 18 of the N. B. Journal of Education, 1886.

WE have received the Ontario School Report; also from Supt. Dr. Milligan, the Report of the Methodist Schools of Newfoundland.

THOSE who are looking for recreation and instruction combined during the coming vacation, should read the advertisements of the Summer Schools on another page.

THE Local Legislature of P. E. Island met on the 28th ult. Direct taxation is promised by the Government. Measures of retrenchment may also be anticipated. In the general cutting down of expenditure, it is to be hoped that nothing will be done to affect injuriously the educational interests of the Province.

IT is most gratifying to observe that both Provincial Secretary Mitchell and Mr. Powell, a prominent member of the opposition, expressed satisfaction that the Provincial expenditure for education had increased in New Brunswick. That is the proper way to look upon it. Whatever wrangling there may be over other matters, there should be harmony in the promotion of knowledge.

THE Chief Superintendent of Education in New Brunswick, says in his Annual report:

The number of non-resident owners of property who reside and, therefore, pay their school taxes in other and more wealthy districts of the same parish is gradually increasing. In some districts it has been found almost impossible, from this cause, to maintain a school even for one term each year. The provision of the School Act which requires the taxes on

property included within the bounds of a district, if owned by a resident of another district in the same parish, to be paid in the latter district, works a serious injustice in many cases. It would probably create confusion and dissatisfaction in many places to change the law now; but unless it be changed we cannot hope for a material reduction in the number of districts requiring special assistance.

This a matter that has been more than once brought to the notice of the Board of Education, and is yearly becoming of more importance. The tendency is and has been for ownership of outlying property to concentrate in towns and villages to the impoverishment of country districts. As long as the present system of parish unity is adhered to the evil will exist. The school district is a unit in the management of its school affairs. Why should it not be a unit in the ownership for school purposes of all the property within its bounds?

BATHURST SCHOOL TROUBLE.

The report of Mr. Justice Fraser (now Lieut-Governor Fraser) on the Bathurst school difficulty, has been published, and makes a volume of seventy-two pages. The history of this case is familiar to our readers, and it is not necessary now to go into it further than to say that the difficulty grew out of alleged attempts by the Roman Catholics to bring the common schools of Bathurst and other parts of Gloucester County more or less under their control. The matter was made the subject of legislative enquiry, and Commissioner Fraser frees from the charge of interference the local clergy; and finds further that the Government and Board of Education were impartial in the administration of the school law. The report points out that the trustees had not discharged their duties as satisfactorily as they might have done, and that there were departures from the strict requirements of the law on the part of some teachers, although these are regarded by the Commissioner as unintentional, proceeding from ignorance of the school law rather than from wilfulness.

The finding of the Commissioner is regarded as an impartial and conscientious judgment of the matter in dispute, and will no doubt be accepted as such by all who do not wish to see our excellent school system imperilled by prejudice and groundless fears. If the school law continues to be administered with wisdom and tact, as it has been since its inception in New Brunswick, there is no need that the consciences of any sect shall suffer, or that passion or prejudice be stirred up in any locality, if the administrators of it in these localities are prudent men, and have some regard for the feelings and views of their fellow citizens.

INDIVIDUAL TEACHING.

The gardener who trims his trees all to one pattern fails to produce those pleasing effects which are found where the peculiarities of each individual are respected. A well trimmed hedgerow may look well as a whole, but the varied beauties and normal development of the units are entirely lost. Is it not so in the most of our schools where the pupils are dealt with in masses? Every one must be cast in the same mould and subjected to the same treatment. The talented become restive and bad or acquire habits of idleness while waiting for the dull, and the dull become discouraged and hopeless while trying to follow those naturally bright. We always felt it to be a great injustice to keep large classes entirely together for six months or a year at a time, to suit the teaching to the average ability of the class and to ignore the idiosyncrasies of each pupil. It is contrary to the fundamental principles of modern pedagogy.

We have endeavored in our own class teaching to direct our attention to the weakest members of the class, allowing the rest to work by themselves but reserving enough time to give them some individual assistance, and allowing them to advance as rapidly as they were able without regard to the progress of their class mates.

We were therefore much interested in reading a description by Mr. Search, Superintendent of the Pueblo Schools of a system of "Individual Teaching" adopted there. "The fundamental characteristic of the plan on which the schools are organized is its conservation of the individual." Every pupil carries on a large part of his studies by himself—the teacher passing from desk to desk, developing self-reliant and independent workers. Love of work caused by success soon becomes a more powerful stimulus than competition. A careful record is kept of each pupil's advancement. It is found that artificial inducements to study are not needed—nearly every one developing into an ideal student. We believe that when laboratory methods become more common a modification of this plan will be adopted everywhere.

N. B. UNIVERSITY SENATE REPRESENTATION.

The Legislature being in session again, the REVIEW would draw its attention to a resolution carried almost unanimously at the last Provincial Teachers' Institute, which was in effect, that any teacher be made eligible as a Senator of the University. Few if any of its graduates in the teaching ranks are opposed to the change. They are quite willing to take their chances with the rest of the teachers.

There does not seem any advantage to be gained by thus circumscribing the representation. The Government has not always appointed graduates of the university to fill vacancies in the Senate, and in so far as is known, no injury has been done in so doing. There are graduates of more than one university among the teachers, and there are teachers who are not graduates of any university who are preparing as many pupils to matriculate, and taking quite as much interest, if not more, than those who hold a degree. Why should these men be denied equal rights with others perhaps less deserving?

Again, about seventy-five per cent. of our teachers are women, and a large and increasing number of the university students are women. Why should they not have a chance with the rest? The most determined opponent of female suffrage could not object to this.

It has been urged that if Senate representation were thrown open to all the teachers, a poor selection might be made. The teachers can at all times be relied upon to make a suitable choice. The legislators will do well to remove all barriers in this matter of Senate representation. If they are not removed now they will be in the end. So why keep the teachers stirred up when no good object can be gained by delay?

The best interests of the university will be promoted by getting as many teachers as possible to take an interest in its welfare. This can not be done by any policy of exclusion.

HOW TO AVOID OVER-PRESSURE IN SCHOOL-WORK.

The impression seems to be very general that over-pressure of studies in our public schools is seriously injuring the health of our pupils, stunting their growth and even failing to secure the intellectual vigor which is sought. That such over-pressure does exist especially in graded schools is undoubtedly true. But we think that the extent of the evil is greatly magnified. A much more serious evil exists in the social customs which permit young people to spend so much of their time at parties extending into the "wee sma' hours."

As a remedy for over-pressure we propose: 1. A succession of studies instead of so many contemporaneously. When pupils become particularly interested in some one of a group of subjects it is well for a time to give special attention to that subject to the neglect of others of the same group. But this principle should never be carried so far that at any time one of the fine fundamental disciplines will fail to be represented by some one or other of its sub-divisions so that we may not fail to secure an all-round develop-

ment. 2. Let laboratory methods take the place of book work. These methods can be applied to geography, history and other subjects as well as to science. No pupil is likely to be injured by spontaneous self-activity. It is the dull routine of continuous memorizing that crushes the life out of young minds. 3. Let every recitation be conducted by the teacher without the open text-book. If the teacher has to know every subject so well that he is independent of the book when asking questions the pupil is not likely to suffer much from difficult tasks.

GRAMMAR AND SUPERIOR SCHOOLS.

The Chief Superintendent (N. B.) in his excellent report indicates some proposed changes in the present status of the grammar and superior schools.

After 1895, he recommends that grammar schools not having an enrolment of twenty pupils receiving instruction beyond Standard VIII, be not recognized as entitled to the grant. These schools, however, may obtain the superior school grant if they are graded.

Many associations cluster around the old country grammar schools, and many of our prominent citizens owe much to them. It may be that the relatively small numbers of advanced pupils graduated from them represents in importance to the state much more than the greater number sent out from the schools of the populous centres. Yet the "greatest good to the greatest number" is a principle which must in the end prevail. It would serve as a great impetus to secondary education, if all schools, regardless of location, having twenty pupils receiving instruction in advance of Standard VIII, were recognized as grammar schools. Perhaps the Chief Superintendent may have in contemplation some such plan. That superior schools should be graded is sound in principle. In practice, however, some hardship will be felt in a few localities. In these places one teacher with a class-room assistant is doing excellent work and admirably carrying out the intention of the superior school. In other cases such superior schools are not deserving of the grant. Taken all in all, little fault can be found with the suggestions of Dr. Inch.

It would be a matter of regret, however, if by the proposed changes, the aggregate amount of the grammar and superior schools grants was decreased. New Brunswick is not fully abreast of the times in the matter of secondary education, and any decrease in the grant for that purpose would have the effect of still further reducing the number of desirable positions and lowering the average salaries paid to teachers.

TALKS WITH TEACHERS.

Which is the better plan in graded schools; one or two grades for each teacher? Nearly all teachers will reply at once, *one* grade. In giving this answer so promptly, are we not sometimes influenced by our ideas of what is easy? I presume that this feeling is allowable even in a teacher who is supposed by many to enjoy a very easy existence, but there is no necessity to argue that matter with teachers. I am of the opinion that one grade is sufficient for each teacher, always providing that she makes the most of the opportunities it affords her. If by one grade, one class for the whole school is meant, then a teacher can manage two grades as well as one, and I would advise school officers to impose two grades as soon as possible. Suppose there are fifty pupils in one grade in a room, should forty-nine be kept listening while one is reading, until the whole or a portion of them have read? I think not. Should the class be divided into two sections of twenty-five each, simply because it is too unwieldy? I think that one class of fifty is too large but that is only one of many reasons in favor of two or more classes. Each teacher has many bright, attentive and regular, and only a few, let us hope, of dull, inattentive and irregular pupils. These latter pupils can not advance with the same rapidity that the other pupils can, they require more drill and attention from the teacher; should they be incorporated with the best pupils to be a clog upon their advance and to be discouraged by the effort, or should they be put in a class by themselves? I think they should be separated, but always with the opportunity afforded for promotion if it is deserved. On the other hand if a pupil fails to keep up with his work there is the opportunity of putting him where he belongs. A teacher will thus have a powerful lever to aid her in her work. With only one class in each room an indifferent teacher will have much idle time on her hands. This should not be.

The tendency is to put the most effort upon what is sometimes called the grading class, and to slight "class B." Do not do it. The conscientious and skilful teacher is not marked by the few brilliant pupils, but by the *few unprepared* pupils she has. It may be that the attainments of the few show the opportunities of all. Yes, minus industry on the part of the teacher. Take care of the weak ones and the strong ones will take care of themselves.

A word more about normal school entrance examinations. Applications must be sent to the Inspector not later than May 24th. There are forms which may be obtained from any grammar or superior school

teacher in the vicinity. Do not ask them to mail them but apply personally or send for them. The Inspectors also have them. You had better instruct candidates to register their applications. The examinations this year begin on Tuesday, July 3rd, at 9 a. m. It is probable that the same arrangements as to stations will prevail this year as last. Consult REVIEW and School Manual, and do not make unnecessary inquiries.

New Brunswick School Report.

The Annual Report of the schools of New Brunswick for 1893 shows steady and progressive advance in educational matters. There has been an increase in the number of schools, teachers and pupils in attendance. There has also been an increase in what the superintendent regards as of greater importance, viz, in the gradual increase of the average number of days of the school year, during which schools are maintained in operation, and the consequent lengthening of the uninterrupted school life of individual pupils. He regards four terms' continuous attendance at school as of greater advantage than twice that length of time spent at broken intervals. Comparing the first term of 1893 with the first term of 1891, an increase is shown of 78 schools and 586 pupils. During the past two years the average time that the schools have been in operation increased $1\frac{1}{2}$ per cent. and the average attendance of pupils $2\frac{1}{2}$ per cent. St. John County leads the province with a percentage of 72.90. The few country schools in this county gives it an advantage. The average attendance for the whole province for the year exceeds that of any year since the school terms have been arranged as at present. Nearly $21\frac{1}{2}$ per cent. of the population was enrolled.

"Of the cities and incorporated towns, Fredericton made the highest average attendance during the year, though surpassed by Milltown for the term ending December, 1893. Milltown has the honor of having made the highest average of attendance (86.71) ever reported by any public school since the present School Act went into operation. The average of Milltown for the year 79.84 and for the last term 86.71. St. Stephen's average for the year was 82.45, Saint John 78.33, Moncton 78.48

"A careful analysis of statistics will show that about 15,000 children begin school life each year by enrolment in grade I. Of these 15,000 children, about 76 per cent. reach grade II.; about 70 per cent., grade III.; from 60 to 65 per cent., grade IV.; about 50 per cent., grade V.; while only 16 or 17 per cent. enter upon grade VI. About 5 per cent. of the whole number reach the high school grades. As this average is for the province, it is evident that a considerably higher percentage of the pupils in the cities, towns and villages reach the higher grades.

"It is clear that the result of this analysis justifies the special attention that is now being given to primary edu-

cation. If one-half of the children enrolled in our schools never pass beyond the fourth grade, the course of study for these grades should comprehend, as far as may be possible, the fundamental essentials of a practical education, and should not comprehend more. An examination of the table will show how far this ideal is being reached."

Dr. Inch while emphasizing the importance of the training given in primary grades, does not wish the inference to be drawn that the importance of attention to the higher grades is only in proportion to the number of pupils enrolled in those grades. He justly remarks:

"Of the children entering school in any given year, the five per cent. who pass through all the grades to the high schools, and some of them to the university, may be of greater value to the country than the ninety-five per cent. who drop out of school after a shorter course; for, from this small minority must be drawn our teachers and our intellectual leaders in every department of thought and activity."

A very satisfactory feature in the report is the gradual increase shown in the relative number of first and second class teachers. Female teachers number 73 per cent. of the whole number employed which for the year was 1702. In the matter of teachers' salaries the report is not so satisfactory. There has been a decrease in the remuneration of all classes of teachers except third class male, which each year are becoming fewer. About 57 per cent of the amount paid for teachers' salaries is now derived from the provincial revenue and the county fund. This condition of affairs calls forth from the Superintendent strong and deserved criticism.

"If the above figures are to be taken as an accurate measure of the value assigned by the ratepayers of the province to the work done in our schools, it is manifest that there is clamant need of enlightenment, if not immediate legislation of some sort. With advancement in most other directions, and with more rigid requirements of teachers as to scholarship and training, they receive no better salaries than were paid twelve years ago; and yet complaint is made that many of the best teachers leave the profession after a few years' service. Perhaps the fault rests more with trustees than with the general body of ratepayers; for it is unfortunately true that in some cases the only interest shown by trustees in the schools is to keep them closed as long as possible, and when compelled to open them, to employ the cheapest teachers obtainable without regard to the educational needs of the district. A more summary method than the law provides seems necessary in order to prevent school trustees from thwarting the purposes for which the school law was enacted. It is true that many districts throughout the province are so poor and so sparsely populated that even with the special provincial grant provided in such cases, they are obliged to rest satisfied with school privileges for only a part of the school year, and with teachers who are willing to accept a very small remuneration. This is a disadvantage incident to pioneer life, and cannot be helped,

but districts which have an assessable valuation of \$20,000 and upwards are well able to maintain a school permanently and to employ at a reasonable salary teachers of a class not lower than the second."

The total amount levied from all sources for the support of schools during the year was \$421,383.60. The average cost per pupil was \$6.06, which is comparatively very low, and leaves room for very much extended local effort.

The Superintendent's remarks and recommendations regarding grammar and superior schools will be regarded with interest and perhaps alarm in some quarters. He makes out a strong case against the existence of many of the grammar schools and jeopardizes the ungraded superior schools. He says:

I would, therefore, recommend that after the present school year, no ungraded school be recognized as a superior school; that all superior school buildings be provided with suitable furnished apartments for at least two graded departments; and that the principal of a superior school shall be required to hold a superior school license based on evidence of scholarship higher than is required of other first class teachers; or on a successful experience of at least three years as a teacher of the first class, certified to by the inspector or inspectors.

In regard to grammar schools I beg to suggest:

1. That after the close of the year 1895 every grammar school not showing an enrolment of at least twenty pupils above grade VIII, tested by proper official examinations, shall be reduced to the rank of superior schools.

2. That it shall be the recognized policy of the Board of Education to have the grammar school located at the most populous centre within the county, or at such place as will be most likely to ensure to the school the largest possible attendance of advanced pupils.

3. That in order to encourage local effort to provide suitable buildings and equipments, and to engage a strong staff of teachers, the grammar school grant shall be paid, not only to the principal of the grammar school, but to every additional teacher holding a grammar school license whom the trustees may employ to do grammar school work, at a salary from the district of not less than that received from the provincial revenues.

"It is probable that the policy I have outlined would tend to leave some of the counties without a grammar school; but it would certainly tend to strengthen and develop those which are in the best position to do high school work; would remove anomalies which now exist, and would, in my opinion, give an impulse to the interests of secondary education which would be of benefit to the province at large."

The new scheme of normal school entrance examinations is referred to as having been most satisfactory so far, though the receipts did not equal the expenditure. At least 175 of the schools of the province were represented by candidates.

Local license has been mainly confined to the French speaking counties, from whence it seems im-

possible to induce candidates to attend normal school. It would seem that so long as there is any possibility of securing the local license that the well-to-do French will not go to the expense of undergoing training for teaching.

Much valuable and interesting information is embraced in the statistical tables and appendices, which include: The Report of the Chancellor of the University, Report of the Normal School, The Inspectors' Reports, Reports of Boards of School Trustees, Reports of Institutions for Blind, Deaf and Dumb, and some of the papers read at the County Institutes.

Gleanings from the N. B. School Report.

The average amount received from the County fund per pupil, was 57 cents for ordinary districts, and 76 cents for poor districts. It is a decided advantage to be on the poor list.

Of about 1,700 teachers employed, not more than 25 received salaries of over \$700, and only 10 a salary of \$1,000 and upwards.

Trustees continue to manifest disinclination to visit the schools. The inspector is the most frequent visitor in many schools.

There was a marked increase in the number of schools open during fall time. This is in many cases due, no doubt, to the lengthened summer vacation.

There were 50 superior schools in operation during the year.

Only four grammar schools, viz.: those of Carleton, Charlotte, St. John, and York, had an enrolment each of more than 20 pupils above Grade VIII.

At the normal school entrance examinations held in July 1893, 398 candidates presented themselves, and at a later and supplementary examination, 77 were examined. Of this number, 188 failed.

At the examinations for license held in June, 1893, 330 candidates were admitted. Of this number, 11 failed to obtain any license—and still teachers are not too numerous.

At the examination held in December, 1893, for third class only, ninety presented themselves; of this number fifteen failed to pass.

Nearly one-half the schools in Madawaska are still taught by untrained teachers.

St. John furnished twenty-six of the forty-five candidates presenting themselves for university matriculation examination.

School libraries were added to by 1160 volumes during the year. It is gratifying to learn that a catalogue is in course of preparation.

Charlotte and Northumberland received the largest grants in aid of new school houses.

York and Gloucester Counties contain the largest number of poor districts.

St. John and Charlotte had the largest attendance at the County Institutes—St. John 162 and Charlotte 103—high water mark for both counties.

Arbor Day was observed in 1893 by 463 districts.

PROGRAMME FOR ARBOR DAY.

[It is not expected that the following descriptive programme for Arbor Day at a country school will be followed throughout by any teacher. It is merely intended to be suggestive, and is thrown into the form of description for convenience only—J. BRITAIN, Normal School, Fredericton, N. B.]

All the scholars who are old and strong enough for the work gather at the school-house promptly at nine o'clock (or better at eight), prepared for a trip to the woods. The boys are provided with hoes and axes; the girls with pails or baskets and small hand shovels.

On their way to the woods, they gather some early spring flowers, and learn their names. As the spring migration has now well set in they see and hear many birds on their way. Some are hopping about the meadows and roadsides in search of food, others perched on fence, shrub or tree give forth their joyous songs. One of the first noticed is the Eastern snowbird, commonly called in New Brunswick the blue-bird. It is better, however, that we should call it by its scientific name, *Junco*, since it does not stay with us in the winter, and is not blue. *Junco* will be known at sight by the blackish-ash color of his upper parts which meets the white of his under parts in a definite line on the breast, and by the two white tail-feathers he shows when he flies. His song, which he prefers to deliver from the top of a low tree, is not strong or musical. The children, however, should imitate it as closely as possible. This will aid them in distinguishing it from the note of its relative the chipping sparrow, who will certainly be heard on the way. The latter is the smallest of our "grey-birds." He may be readily known from other birds with a greyish plumage by the brown cap on the top of his head. He is not shy, and will hop along the roadside near enough to show his cap which cannot be seen when he is chirping up in a tree. A larger "grey-bird" with an indefinite dark spot on the breast, will be heard singing a clear, silvery song—one of the sweetest of bird-songs. He is well named the song-sparrow. No other "grey-bird" can approach him as a singer except the vesper-sparrow. These two birds resemble each other so much that

any one with an unpractised eye and ear is apt to confound them. The vesper sparrow is the only "grey-bird" we have which shows two white tail-feathers when he spreads his tail in flight. Having identified him in this way by sight, the children will soon learn to distinguish his song from that of the song-sparrow. Those with good musical powers will soon be able to imitate both. A bird with mostly red plumage, deepening to crimson on the head, about equal in size to the song-sparrow, but with longer wings and forked tail, will probably be heard singing a fine continued song from the top, or near the top, of a tree. He does not hop about the ground much, as the sparrows do, although he belongs to the same family, and his mate is a greyish bird. He is the crimson finch, often called the American linnet.

In passing a low meadow, a grey-bird, somewhat larger than the chipping sparrow, but less bulky than the song sparrow, will be heard singing on the fence, a short weak song — the weakest song of any of our sparrows, but not devoid of sweetness. When disturbed he will probably fly out into the meadow and light upon the ground, or else settle on a low bush, or upon a dried herb a foot or two high. Perched upon such a slender support he may be often heard singing. He will even sing upon a stone or some slight elevation of the ground. If a close view can be obtained, a yellowish line will be seen running just above his eye. He is the Savannah sparrow. He is strictly a meadow sparrow, and never frequents the woods.

Our commonest thrush, which we call the robin, will be seen along the open way. His near relative, the hermit thrush or swamp robin, a shy bird, with speckled breast and dusky upper parts, shading into rufous on the tail, may be found on the outskirts of the woods, but his clear ringing song he usually reserves to gladden the evening twilight. If the season be an early one, and the road pass through or by an intervalle, a bird, mostly black, but with some white on the wings and on the back towards the tail, and a buff spot back of the head, will be heard pouring forth an enthusiastic song from a shrub or tree. He is the bobolink. A little later in the season his mate may be seen creeping through the short grass of the intervalle while he flutters through the air, singing as he goes. *She* is a plain yellowish-brown bird.

The bobolink belongs to the blackbird family, of which two other members are quite common — the thrush blackbird, somewhat larger than the bobolink (the mates are lustrous black in spring), and the still larger crow blackbird, clothed in iridescent black.

On nearing the forest the party may have the pleasure of hearing the familiar song of the white-throated sparrow, commonly known as "Old Tom Peabody,"

from his note. It will be observed that he particularly insists on his surname, which he usually repeats three times in succession. On getting a good look at him, it will be found that he is another "grey-bird," but with a black crown striped with white and yellow.

In the woods many different birds may be heard and seen — bluejays with their harsh voices; woodpeckers creeping *up* the trees with their bodies braced up by the shafts of their tail-feathers; nut-hatches creeping *down* in diligent search for insects; and various species of warblers, often in brightly colored plumage, flitting from tree-top to tree-top.

But it is now time to turn attention from the feathered inhabitants of the forest to the trees themselves. The children will be able, on looking around, to divide all the trees in sight into two classes, those which have green leaves on them, and those which have none — the former evergreen, the latter deciduous. It will be an object of laudable ambition to obtain specimens, for transplanting and for illustration, of as many different species of each class as possible. The different kinds of evergreens will be readily distinguished by their foliage, but how may the naked deciduous trees, especially those closely related, be known apart? Examine the ground beneath them, and there will be found the withered forms of last year's leaves.

The large boys will select symmetrical young trees for transplanting, preferring those which grow in open spaces, as they will be less affected by transfer to the open school grounds than those which have been accustomed to grow under the shade of other trees. They will be instructed to cut as few roots as possible, and especially to preserve the delicate rootlets. While this work is proceeding, the girls and younger boys collect under each species, a pail or basket full of mould and withered leaves and fruit.

After working hard for an hour or more, the trees and vessels are carefully placed in a wagon which had followed the party. They return to the school-house making as good use of their opportunities of observation by the way as time will permit.

They find the school-room in possession of their mothers and older sisters, and their desks loaded with substantial articles of diet. After grace has been said by one of the trustees or their secretary, they partake of a hearty lunch.

The dishes are next cleared away, and in their stead are arranged small branches, leaves and fruit from the various species of trees brought from the woods. In front are placed small specimens with a vessel beside each containing some soil, mould, etc. gathered at the foot of a large tree of the same species. The children occupy the desks while the parents

and friends, the members of the school board, and the local clergymen take seats on the platform or in other parts of the room.

The teacher then directs the children's thoughts to the trees they have brought. He does not tell them much, but leads them to discover many things they had not noticed before. They will learn that the leaves of the evergreens really fall off, since dead ones are found in large numbers in the baskets containing earth and moss gathered beneath them. They will explain why, notwithstanding, they are always green. They will find that there is a layer of leaf-mould under the dried leaves of the deciduous trees, and that this rich mould is produced by the decay of these leaves, and that the evergreens do not enrich the soil in this way to nearly the same extent. They will notice that the evergreens generally bear cones, but that all our cone-bearers trees are not evergreen—the larch or tamarack being the exception. They will find both staminate and pistillate flowers upon the branches of the tamarack, and will conclude that the cones are ripened clusters of pistillate flowers, from which seeds may be obtained in autumn for planting. They will learn to distinguish the species of cone-bearing trees by their foliage and cones, and will place them all in the pine family.

In order that the foregoing exercise may not be prolonged to the point of weariness, the examination of the deciduous trees is postponed.

Next a few appropriate recitations and songs are given by the pupils, and a short address by one of the trustees or by a gentleman designated by them.

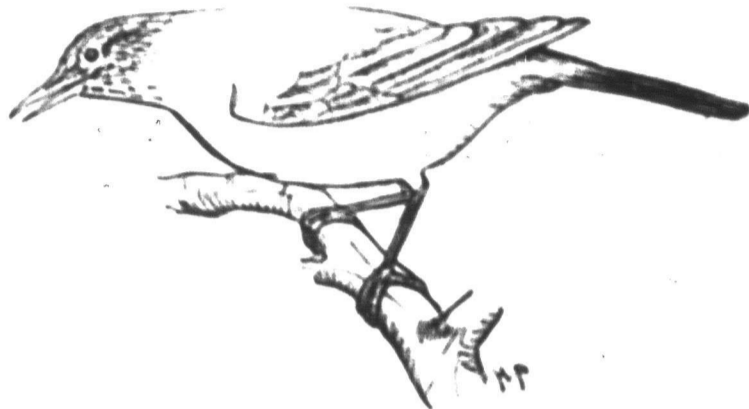
It is now two o'clock. The boys repair to the school grounds, where, under the direction of the teacher, assisted if necessary by some resident who has been a successful tree-planter, they carefully set out the young trees they have selected.

The girls, meanwhile, put the school-room in order and adorn the windows with potted plants brought from their homes or presented by friends. The leaf mould which they brought from the woods is laid away to dry that it may be mixed with sifted garden soil for re-potting the plants when necessary.

The clock has struck four, so all gather in the school room, sing a song of spring, another of friendship, and close with the National Anthem.

A perfect system of public education seeks to make a good citizen, an intelligent and right-minded man, and takes into account the whole of his prospects and faculties, and his opportunities in the world, and therefore needs the co-ordination of intellectual and manual effort.

NATURE LESSONS.



THE AMERICAN ROBIN.

“Welcome little robin
With the scarlet breast;
In this winter weather
Cold must be your nest.”

S. “But our robin has not a scarlet breast. It is more chestnut or reddish orange.”

T. “Correct. The robin of your reader is the English robin, which is a smaller bird, and belongs to a different subdivision of the singing birds. The “red-breasted thrush” is the common reddish breasted bird coming about our fields and houses in spring, so that it is not very strange the people from the old country should name it after their own very interesting bird which it recalled to their minds.”

S. “Then the poetry in our books is about another robin altogether.”

T. “Yes; but then we have a bird about which poetry may be written. It is a new subject, and poets are always looking for new subjects; therefore there is a new chance for any of you who are poets. Not exactly a new subject after all, for Lowell alludes to

“The sobered robin hunger-silent now,
Seeks cedar-berries blue, his autumn cheer.”

S. “But how shall we know that it is a thrush?”

T. “First, you know from its general appearance that it belongs to that great order of the *passeres*, sparrow-like birds, or perchers as they are sometimes called. Second, the tarsus or “leg” is flattened to something like a knife edge behind; therefore it is not one of the “fly-catchers.” Third, it has evidently ten primaries, that is strong wing-quills in the first joint of the wing, although the first one is very often not half the length of the second; therefore it does not belong to the sparrow group of families. Fourth, its tarsus is “booted,” that is, covered with one continuous plate instead of a number of small scales, and it has little bristles near the angle of its mouth called “rectal” bristles; it may therefore be an “old warbler” or a “thrush.” Fifth, it is of a moderate size, having a wing of more than three inches in length, and its young are spotted, therefore it must be a thrush.

Jack. "Yes, its young are spotted and the old female bird has scarcely any red breast. She looks as if all the brownish or orange brownish of the male bird were washed out of her feathers."

T. "Very good, and quite correct. You have no doubt noticed its slender bill as compared with the short, strong, conical one of the sparrows. But can you tell me what it feeds upon?"

S. "Earth worms, small insects, caterpillars, and sometimes berries."

T. "It is useful then. What can you tell me about their nests?"

At this stage various accounts were given of the curious architecture of the robin, from which it would appear that while they always commenced from a base of twigs and finer rubbish, lined with a wall of clay which is again lined with finer fibres picked up by the industrious birds, some of the nests showed greater industry or genius than others even when the same material was accessible to all. Then came recitals of the numbers of the pretty sea-green eggs, from four to six in number, about an inch and a quarter in length and over three quarters of an inch in breadth; of the eleven or twelve days of hatching, followed by as many more with the young chickens attached to the nest; and the final dispersion of a family, which the same pair may rear at least three times during the same season. Last of all the following list of thrushes seen in the neighborhood was written down.

1. The robin (most common). 2. The hermit thrush (olive brown above, reddish brown on rump and tail, dusky spots on breast, white ring about eye, seven inches long, nearly three inches shorter than the robin). 3. Olive-backed thrush (over seven inches long, no reddish anywhere on back). 4. Wilson's thrush (over seven inches in length, reddish on back equally distinct from head to tail, breast and throat with brownish or pinkish yellow, with indistinct brownish spots). List in the order of abundance.

Jack's average dates for six years (1884 to 1889) of the spring migrations of some birds opposite the middle of Northumberland's Straits. Problem: Note whether the first appearance of the same birds in your school section is earlier or later than this average for 1894.

| Names of Birds. | Average first appearance 1884 to 1889. | Abundant 1884 to 1889. |
|-------------------------------|--|------------------------|
| The Canada Goose..... | 10 March..... | 9 April. |
| The Song Sparrow..... | 19 March..... | 19 April. |
| The American Robin..... | 24 March..... | 16 April. |
| Brant..... | 25 March..... | 23 April. |
| The Fox Sparrow..... | 19 April..... | 25 April. |
| The Kingfisher..... | 21 April..... | 16 May. |
| The Yellow Crowned Warbler.. | 6 May..... | 24 May. |
| The White Bellied Swallow.... | 6 May..... | 22 May. |
| The Bobolink..... | 21 May..... | 5 June. |
| The Humming Bird..... | 21 May..... | 2 June. |
| The American Goldfinch..... | 22 May..... | 11 June. |
| The Cedar Waxwing..... | 8 June..... | 15 June. |

For the REVIEW.]

Field Botany.

Rest is not necessarily idleness. As a relief from the engrossing cares and labors of the teacher's vocation it is wise that he should have an avocation—a hobby, if you will, preferably in some branch of science or literature, follow it up for its own sake until he is specially interested in it and can claim some special knowledge of the subject; and I wish to present the claims of field botany as one form of mental and bodily activity in which a sensible person may find at once a pleasant and a profitable employment for his leisure hours.

(1) Plants are found everywhere, and in endless variety; a readily accessible and inexpensive fund of material for study.

(2) They are living things. Though less active than the birds and bees and butterflies, they have movements and habits of their own that are of deepest interest to the close observer; while their relations to the animal world are far more close and interesting than even the earlier botanists of our own century supposed.

(3) Plants (including forest trees of course) are closely identified with locality, and appeal to the love of home. They form a connecting link between the land itself and the myriad forms of animal life which they shelter and sustain; and they form characteristic features of the landscape, more prominent in this level country at least, than the hills and waters whose sides and margins they adorn. Whoever loves his country must therefore love its forests and its fields, and can find a deeper pleasure in a closer acquaintance with them.

(4) Plants attract us by their beauty, even in such unnatural situations and surroundings as those of our gardens and greenhouses; much more so in their native wilds, if we would but take the trouble to see and enjoy them there. The graceful shape of leaf and flower, the lines of tree growth, the distribution of light and shade, and all the varied tints of stem and leaf and blossom and fruit are a liberal education to the eye, and the best means of training it to an appreciation of form and color that can be had outside a school of art.

(5) Another way in which one may find plants interesting is in watching their success or failure in the struggle for existence. In exposed places or in poor soil certain of the hardier plants alone may be able to subsist, whilst in better situations these same plants will disappear because stronger but less rugged ones come in and crowd them out. Some seem to take an unfair advantage of their neighbours, and we take sides against them in the struggle and call them weeds.

Some claim our pity and protection. With such sentiments aroused, a favorite walk never loses its charm, and each conspicuous plant along the pathway soon becomes a familiar acquaintance, in whose fate we are concerned, and whose death or injury brings to us a sense of personal loss.

(6) In noticing either the forms or the habits of a few favorite wild plants, we soon become interested in others, and will want to know their names, so that we may speak or write about them to others who are interested, and hence we find a new field of study, and pleasure in learning to identify and classify them. (This is what is chiefly dealt with in our botanical text-books, but it is neither the beginning nor the end of botany, and if ever a pupil finds this study of botany dull and irksome, it is because his teacher allows him thus to begin it in the middle and end nowhere.) There is no better training in habits of observation and discrimination than is to be found in the determination of species, either of animals or of plants; and the plants offer this advantage, that you may usually know where to put your hand upon a specimen when you wish to study it, an important matter if you wish to make a serious study of your subject, and nothing of course is worth studying in any other way.

(7) Knowing plants by name, we may then begin to study their geographical distribution. This will be found very interesting in itself, and much more interesting when we know that just such information as we or any collector may furnish about the occurrence of species in a certain locality is eagerly looked for by scientific men for its bearing upon some of the deepest problems of geographical botany, and may do more to determine for them some point in dispute than any study of the plant itself. Is there any practical benefit in all this?

If field botany furnishes good exercise, a good mental discipline, and an insight into the beauties of nature, what more do we want? Nevertheless it has a much more practical bearing upon the affairs of everyday life. Your net cash return, if that is what you seek, is likely to remain a minus quantity, but the public benefit that may arise from a fuller knowledge of the flora of our land is not inconsiderable.

Working botanists some time since reached the opinion that a knowledge of the indigenous plants of a district was a safer key to its agricultural capabilities than any meteorological observations or chemical analysis of the soil could afford; and this opinion is now being accepted and acted upon to some extent both in Canada and in the United States. The juneberry, or shad-bush (*Amelanchier*), for instance, is known in the Northwest Territory as saskatoon; and

it has been noticed that wherever the saskatoon berries grow wheat will ripen. The extension of this idea promises to save much useless expenditure of time and energy, and direct new settlers at once to a proper use of their lands.

One of the saddest sights in New Brunswick is a certain bare ridge near the centre of the province, lifting against the sky at regular intervals a row of ruined chimneys, marking the sites of houses long since deserted because the settlers found that their land was unfit for cultivation. Might not an examination of the native plants have told an expert that the original forest growth of that ridge was the only profitable crop it could ever be made to produce? And if by a knowledge of our flora we can ultimately decide what part of our wild lands should be cleared for crops and what part left in forest, it will be of inestimable benefit in the development of our natural resources, and in compiling and preserving lists of the local flora, and records of the times of flowering of certain plants, the teacher may feel that he is doing a work that will benefit others as well as himself; and by writing to the editors of *THE REVIEW* on the subject he may learn how to communicate the results of his observations so as to make it a part of the organized work of the Botanical Club of Canada.

J. VROOM.

St. Stephen, N. B.

To the Editor of The Educational Review,

Dear Sir:—Will you kindly give me space in *THE REVIEW* to correct an error which appears on page 53 of my Annual School Report for 1893, in regard to the number of inspectoral visits made during the year ending June 30th, 1893. The mistake was made by one of the clerks counting only the number of schools visited and not the number of departments in each school. The following is a corrected statement of the number of inspectoral visits made by each inspector, including the number of districts reported as having no school at the time of the inspectoral visitation:

| | | |
|-----------------|-------|------|
| District No. 1. | | 350 |
| " " 2. | | 374 |
| " " 3. | | 336 |
| " " 4. | | 454 |
| " " 5. | | 422 |
| " " 6. | | 376 |
| Total. | | 2312 |

Yours truly,

J. R. INCH,

Chief Supt. of Education.

Education Office, Fredericton, N. B.
March 28th, 1894.

For the REVIEW.]

Educational Conservatism.

Ever since organized existence found a place on the surface of our globe the conditions of life have been continually changing. The forms and habits of all living things are being constantly modified by their surroundings. When unable to adjust themselves to the changing conditions they soon disappear or sink to a lower form of existence.

The same principle characterizes the progress of human society and the advance in educational methods.

The changes necessary to the individual into harmony with his environment meet with much opposition and are often painfully slow, but when secured they produce a grateful harmony.

In education the intellectual conservatism of mankind is very marked. "It demands more than ordinary pedagogic genius to keep the mind always open at all periods of life to the access of new ideas."

Reforms in education seldom come from seats of learning. Our oldest and ablest educationists become so habituated to the ideas on which they were nurtured that they are unable to take in the full import of new ideas, no matter how anxious they may be for improvement. In the past, educational reforms seldom originated as the result of a definite searching after better methods. They arose from various extraneous causes. But the times are changing in that respect. We may expect that in future the employment of modern methods of scientific research will result in the discovery of the laws of mental development and the nature of child mind. In such a psychological laboratory as that of Dr. Stanley Hall's at Clark University scientific principles for the future guidance of educationists are sure to be worked out.

We need not wonder at the difficulty that many of our foremost educationists experience in becoming reconciled to an improved curriculum of studies. As Von Raumer remarks: "It is difficult for the unaccustomed sight to compass the greatly widened pedagogic horizon."

For example, to depose Latin from the authoritative place which it held for a thousand years seems like sacrilege, even though conformity to modern culture demands it.

Moreover, these changes imply vastly increased intellectual activity on the part of the teacher. The accustomed and therefore easy routine of thought that gives fairly good results in arithmetic or Latin would never serve in the teaching of science. It therefore requires a strong sense of duty and much zeal to cause a teacher to assume greatly increased

work with no apparent increase of reward, or at least of that kind of reward which he is capable of appreciating.

For the improved course of study, not only are better teachers required but vastly better and more expensive appliances are also demanded. Properly equipped laboratories are a necessity of the new education, especially in the secondary and higher schools. Seeing, then, that science teaching demands better preparation on the part of the teacher, harder and more active work while teaching, and more expensive apparatus, need we wonder that those whose principal stock in trade consists mainly in a certain amount of Latin, prefer the good old way?

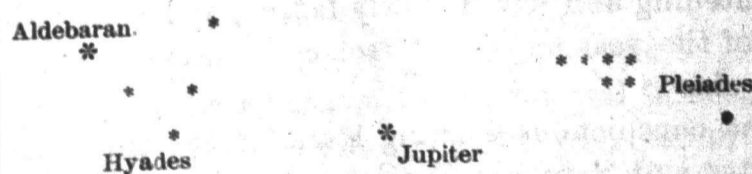
Another real hindrance to the ready acceptance of an improved curriculum arises from the many failures made by its advocates in attempting subjects which they were ill-prepared to teach.

Sir Philip Magnus tells us that "the methods of teaching science which have been, until very recently, uniformly adopted in most schools, are of little or no use for the real purpose of education, the training of the faculties, and the discipline of the mind.

It is therefore incumbent on those who would force science into the curriculum, that they use every possible means to have it taught so that its disciplinary value will equal that of the classics. BEORACHTER.

A Problem for Amateur Astronomers.

Most of the readers of the REVIEW have no doubt been watching the movements of Jupiter and Saturn during the recent clear evenings of March and April. In the western sky Jupiter will be visible for a few weeks yet, and his course in the constellation Taurus will be watched with the keenest interest by those who have been watching his retrograde and direct motions during the past six months. For two or three months he has been on his direct or eastward motion. The diagram below will give some idea of his position as seen on the 7th of April:



In January he was below the Pleiades, forming with Aldebaran (in the Hyades) and the Pleiades a right angled triangle, the right angle being at the Pleiades. He has since been moving upwards nearly in line with the ecliptic, in his eastward motion, making the angle more and more acute each evening. About the last of April he will be in line with Aldebaran and the Pleiades just to the right of the open part of the V-shaped cluster of the Hyades.

Now turn to the east and find Saturn. He may be easily picked out by any one from the following diagram, which showed his position on the 6th of April:

* Saturn
* Spica

Spica, in the constellation Virgo, is a bluish star; Saturn is yellowish-white, and formed on the 6th of April a straight line with Spica and the fainter star above in Virgo, the line pointing north-west and south-east. Saturn is on his retrograde or westward journey (nearly in line with the ecliptic), which will continue until about the first of July, when he will turn and resume his eastward or direct motion, and about the first of September will be again in the position represented by the above diagram.

We hope the readers of the REVIEW will get their pupils on the track of Jupiter and Saturn, and let them observe the latter during the summer, for Jupiter will soon disappear in the sun's rays. Now who will work out the problem of this curious backward and forward motion of the planets? Will Mr. Cameron enlighten the readers of the REVIEW upon it?

Astronomical Notes.

[A. Cameron, in *Halifax Herald*, April 3rd].

* * * Venus is in the morning sky for early risers to look at. The glow of dawn does not quench her light, nor even the full splendor of the sun himself. She has more than enough brilliancy to show easily in anything like a clear sky at any time of day from sunrise until about the middle of the afternoon. But, of course, to see her at her best you must get up and look at her before sunrise. And the sight is beautiful enough to be well worth even such a supreme act of self-sacrifice as this.

Mars may be seen at the same time, but he makes a poor show in her presence. However, he is slowly brightening and she is slowly fading, and before the end of the year he will attract much more attention than she.

The conspicuous evening stars for the month are Jupiter and Saturn. Jupiter is nearing the end of his evening career for this season; Saturn is just beginning his.

Morality is a social product; it is not the result of intellectual and scientific teaching. Personal example and personal affection are its true soil, and all education must be organized upon that basis in order to be effective.—*Professor Hyslop*.

Tree Planting.

By the courtesy of Mr. James Reynolds, Secretary of the Horticultural Association of St. John, we are permitted to make the following extracts on choice of trees and planting, from a letter written by Mr. Richard Power, director of the public gardens, Halifax. Mr. Power's experience and practical knowledge of tree planting give much weight to his opinions, which it is hoped may be useful to the readers of the REVIEW who wish to observe Arbor Day in an intelligent and useful way:

Our experience in tree planting leads us first to get good established trees, eight to ten feet high, from nurseries where they had been moved before. Prune the tops back to some extent, dig holes two feet six inches in diameter and fifteen inches deep. If the soil is poor you may provide some garden earth or street sweepings that would be a year in compost and mix with the earth taken from the hole. I find we have some trees planted on our common, in the natural soil. They never seemed to make any start, but where our ground was low and swampy we filled in with ashes and street scrapings and planted. To our surprise we have the best trees on the common to-day, and planted ten years later than the ones in the natural soil.

The trees that do best with us are European. English elm is the fastest grower, lime, (European), Norway maple, horsechestnut are the best. I may say I find the horsechestnut is not suitable for parks in cities. It is a beautiful tree with nice flowers, but when the nuts are ripe the boys destroy them by throwing stones and sticks, and climbing for them. Among the American kinds I find the white leaved maple (*Acer dasycarpum*) is a quick grower, cut leaved birch (*Betula luciniata*), our red oak (*Quercus rubra*), and our own red maple (*Acer rubrum*). It is a loss of time to take trees out of the woods as they come up with poor roots. But if trees six or eight feet were taken up and transplanted in a garden in nursery rows for a couple of years they make nice trees with new roots and will move well; but if you should plant trees from the woods they are so drawn in the thickness that they sway with the wind and don't get a chance to take root.

We never give manure to trees when planting as the roots are wounded. It helps to decay them, but manure can be on the surface in the winter and let it decay; it would be a protection and help.

If you can get larger trees than the size I first stated all the better, but see that they have good roots and are carefully taken up.

I believe the best time for planting trees is from the middle of April to the middle of May. If planted in the fall the frost heaves them up and they are exposed in open places all winter.

In many towns in the United States it is found to be cheaper to convey pupils from remote districts to a central school than to provide them with schools near their homes. The pupils have also the advantage of attending larger and better equipped schools.

The Quest of the Arbutus.

For days the drench of noiseless rains,
Then sunshine on the vacant plains,
And April with her blind desire
A vagrant in my veins!

Because the tardy gods grew kind,
Unrest and care were cast behind;
I took a day, and found the world
Was fashioned to my mind.

The swelling sap that thrilled the wood
Was cousin to my eager blood;
I caught the stir of waking roots,
And knew that life was good.

But something in the odors fleet,
And in the sap's suggestion sweet,
Was lacking one—thing everywhere
To make the spring complete.

At length within a leafy nest,
Where spring's persuasions pleaded best,
I found a pale, reluctant flower,
The purpose of my quest.

And then the world's expectancy
Grew clear: I knew its need to be
Not this dear flower, but one dear hand
To pluck the flower with me.

—Charles G. D. Roberts, in *April Century*.

Country versus City Schools.

Observation has convinced me that it is a fact that the pupils of country schools, from twelve to fifteen years of age, who came into the city schools to complete their education, are better qualified to do work in those studies which require thought than the pupils of city schools of the same age. They will attack and conquer a difficult example before the city pupil can decide whether he has ever seen one like it from which to work as a model. Comparatively, the city pupil is helpless. The country pupil has been obliged to work out by himself the examples in a new topic because the teacher, with her numerous classes, had no time to assist him. He had studied twenty minutes and recited ten. The city pupil has studied twenty and recited forty.

The country teacher has no time during the recitation to do more than briefly assist and direct. The pupils soon become aware of the fact that they must help themselves through all but the very greatest obstacles, and they became self-reliant and thoughtful. In the city schools, on the contrary, does not the long recitation period work to the disadvantage

of the pupil by affording time for so much assistance in completing the assigned but unfinished tasks?

Of course city pupils can do many things country people cannot. They can draw a little. They can name, perhaps, more African hamlets than Stanley. They can tell the exact dates of more events and the names of more bones in the body. In short, they can do all things except the thing they should be able to do, namely, to think. They study too little and recite too much. What they study, and not what the teacher develops for pupils, give them independent thought power.

Would not every city school be more efficient if the recitation periods were shortened one half, or at least one third? Pupils have often said to me when a lesson in arithmetic was assigned, "I cannot work those examples. We never had them before." This remark shows that they depend too much on the teacher, and are helpless in the face of new processes. They should expect, from their past experience, to learn their lessons alone, with only a rare exception. They should take pleasure in mastering principles and their applications.

One object of recitation is to find out what the pupil has not done. It is wrong to assume, as teachers often do, that the pupil has done nothing, and then help him through all. Teachers are too kind to pupils, too fatally kind when the power of thought, the exercise of which at first is not pleasant, is allowed to lie dormant. Is this stupefying kindness so common because teachers fear that if their pupils fail in examinations they will be blamed by parents, school boards, and saddest of all, by some who ought to know better, such as principals and superintendents? If a teacher has led her pupils to think, she should be forgiven many mistakes, and her pupils should be promoted, for even if they have failed to memorize a few minor geographical names, and have learned only a few classes of adjectives and conjunctions, they have power to do the work of the next grade.—H. S. Baker, in *Journal of Education*.

As to subjects for reading, I recommend in general all kinds of books that will give you real information about men, their works and ways, past and present. History is evidently the grand subject a teacher will take to. Never read any such book without a map beside you; endeavor to seek out every place the author names, and get a clear idea of the ground you are on; without this you can never understand him, much less remember him. Mark the dates of the chief events and epochs; write them; get them fixed into your memory—chronology and geography are the two lamps of history.—Thomas Carlyle.

The Maple Tree.

[Arbor day, 1893, Girls' High School, St. John, N. B.]

The maple loves the sunlight fair;
Its form this merry day in May
Is clothed with tender flowers so gay,
Our hearts and minds to cheer.

Its leaf by spring's soft showers fed,
Will turn a bright and glossy green,
Fluttering in breeze with laughing mien,
'Till autumn comes, and, lo, 'tis red!

The wintry blast doth sadness bring,
But it o'erlooks the winter drear,
Frees our sad hearts from thoughts of care—
It seems a herald of the spring.

'Twill prove a union true and sure,
If we its planters e'er may be
Like the sweet leaves upon this tree,
Clinging to school days e'en when o'er.

The maple is our nation's tree,
Its hardy roots are deeply laid,
May all who rest beneath its shade,
Strive e'er to be as good as free.

—J. C. Walker.

Science.

"The advocates of science teaching are no less certain than they were that, except as a preparation for some few callings, the old classical training is condemned. It will die hard, but it will die. I do not mean that schools will cease to exist in which the classics will continue to form the main instrument of education. I should be sorry that this should be so. But I mean that such schools, although forming a part, and a very valuable part, of our organized system, whenever we get one, of secondary education, will be comparatively few in number, and in the great majority of our schools the discipline of education will be fetched from the study of what are called modern subjects. I repeat that the qualified success which has hitherto been attained in making the teaching of science a means of mental training, does not in the least degree modify the conviction of the advocates of such instruction, that the new education, based mainly on science, will supersede the old classical training, and will be found not only more practically useful, but more efficient as a means of mental discipline and training."—*Sir Philip Magnus in a recent Discourse on Method.*

"The school-house and its surroundings may generally be taken as an index of the intelligence and public spirit of the people of any community."—*Chief Supt. Inch, of N. B.*

The Teacher in Recitation.

The teacher, while hearing a recitation should assume a position that will enable him to keep all of his pupils in sight.

The teacher should be pleasant and affable in his manner of teaching and thus control his class by his own example.

The teacher should so conduct his work as to keep all in the class interested and busy.

The teacher's language should be well chosen and correct, that his pupils may not lose respect for him because of his many errors of speech.

The teacher should be enthusiastic and energetic thus leading his pupils to feel the importance of the work in which they are engaged.

The teacher should be even tempered, not permitting trifles to ruffle or provoke him to scold, and thus make his pupils disorderly.

The teacher should be prompt in calling and dismissing classes, and prompt in his work.

The teacher should be quick to change his method of recitation the moment interest begins to lag.

The teacher should take as little of the recitation time as possible in reprimanding pupils. A simple shake of the head is more effective than a half-hour's scolding.

The teacher should move about occasionally among his pupils, even during recitation. This will tend to keep all orderly and busy. The teacher should not be too prompt to help a pupil out of difficulty by offering assistance. The recitation is to be made by the pupils, not the teacher.

The teacher should see that his pupils use correct speech in asking questions and in giving answers.—*Raub's School Magazine.*

Professor Truman Henry Stafford, of Williams' College, Boston, is said to be one of the most remarkable lightning calculators now living. One day a gentleman who had heard of his powers and wished to make a test, said to him: "I have a problem for you, Professor Stafford. I was born August 15th, 1862, at three o'clock in the afternoon, this is June 20th, 1883, and it is just three o'clock. Now can you tell me my age in seconds?" The professor frowned, bent his head, and began to walk rapidly up and down, twisted his moustache, and unclasping his hands in a nervous way. After a moment or so, he returned the answer, which was somewhere in the billions. The gentleman produced a paper containing the problem worked out, and said, with a superior smile, "Well, professor, I'll give you the credit for your great genius, but you're several thousands out." The professor stretched out his hand for the paper, then, running over the calculation, said contemptuously, "Humph—you've left out the leap years!"

ITEMS.

Teaching written language alone will never make correct talkers of children. They must be taught to *speak* correctly. How! By never letting one incorrectly spoken sentence go unnoticed in the school-room. No matter what else has to go undone, be firm in the decision that if the child speaks at all it shall speak correctly. Children can be found in the schools by the hundreds who *write* passable English and talk like heathens at recess. In the forgetfulness of play, the home and street dialect has full freedom. But there lies a concealed danger in this determination never to let the child speak incorrectly; for here may result a "nagging" habit in the teacher that will defeat her purpose. There are a good many ways to correct children without a direct attack. Their ear is not accustomed to correct forms of speech. Begin by familiarizing them with proper forms of expression. One good way is to write upon the blackboard before school, a list of sentences in common use among children (correctly written of course), and let the school read them in concert before the regular exercises of the day commence. Whenever these sentences are incorrectly used through the day, attention may be called to it by simply pointing to the blackboard.

Story telling by the children, in reproduction of a story read by the teacher, will give good results if the story teller is not allowed to proceed, after one mistake in language. All this must be done good-naturally. Not a bit of use in trying to drive or scold a child into good English.—*N. Y. School Journal*.

It is said that Doctor Arnold, of Rugby, was once asked why he spent several hours daily in his study preparing lessons which he had taught for years, and that his answer was, "I wish my boys to drink from a running stream, and not from a stagnant pool"—an answer that showed a deep insight into the conditions of all true teaching, and especially that which takes hold of the heart and life of the pupil.—*School Management, E. E. White*.

Every school child in the early part of the present century was taught to believe that there was a terrible and wonderful eddy or vortex several miles in diameter on the coast of Norway, into which ships, icebergs, whales and all the monsters of the deep were indiscriminately dragged and buried forever in the ocean's awful depths. A correspondent of the *St. Louis Republic* says: "I have been informed by a European acquaintance that the maelstrom has no existence outside the imagination of sensational

writers. A joint commission of Swedish and German nautical and scientific men recently went in search of this, the greatest bugbear of antiquity, and report themselves unable to locate it, and that the sea was perfectly smooth where the whirlpool should have been." The latest geographers barely allude to it. One marks its site upon the map, but does not mention it in his article on Norway. According to our way of viewing the subject, says the *Republic*, the maelstrom romance has been pretty effectually destroyed.

The law of true growth is one of symmetrical development. Broad insight and sympathies are entirely compatible and only compatible with the thorough mastery of any vocation. Of all citizens inimical to society, he who has been permitted to follow his mere bent from childhood is most so.

Quite apart from prospective vocation, it is in the interest of true individuality, of that freedom consonant with the laws of well regulated society, that educators contend for a general mastery of the tools of all knowledge as a necessary factor in the proper development of our youth.

He lives best who both in action and in thought and purpose, lives in conscious sympathy with all phases of human experience.

It is impossible to know all of anything without knowing something of everything.—*Dr. Lowrey*.

To give good instruction in the sciences requires of the teacher more work than to give good instruction in mathematics or the languages. The sooner this fact is recognized by those who have the management of schools, the better for all concerned.

All the science conferences protest that teachers of science need at least as thorough a special training as teachers of languages or mathematics receive.—*Report of Committee of Ten*.

The "Maine Law" was enacted first in June 2, 1851. It passed the House 86 to 40 and the Senate 18 to 10. Up to this time Maine was the poorest and most drunken state in the Union. The people drank up all their property—farms and all—every twenty years. But now, as Neal Dow says, every distillery and brewery in the state has been suppressed. In three-fourths of the state, containing three-fourths of the population, the liquor traffic is extinct. Maine is now one of the most prosperous states in the Union. Maine's share of the drink bill of the United States would be according to population \$13,000,000. One

million is the very utmost value of all liquor smuggled into the state. Thus twelve millions a year are saved directly, and indirect losses quite as great are escaped. Nine years ago prohibition—"the Maine law"—was embodied into the constitution of the state. Year by year the methods and measures ensuring prohibition are becoming more effective.—*Witness.*

Woman suffrage is an accomplished fact in New Zealand and some of the United States. At the last general election in New Zealand the favorite candidates of the women—those candidates who favored prohibition and free, unsectarian education—were returned by large majorities. Mrs. Yates has been elected mayor of Onehunga. She thus becomes a magistrate, a position which she is said to fill admirably.

In the February *Forum* Dr. Biggs makes known some facts regarding consumption, with which every school child should be familiar. Consumption is by far the most fatal of all contagious diseases—causing the death of one-seventh of the human race. It is caused by a microscopic microbe which is expectorated by the patient as the disease advances. The expectorated matter becomes dried, and being inhaled in the form of dust by those exposed, it multiplies in weakly and susceptible subjects, especially if they are ill fed or live in a vitiated atmosphere. Children should be warned of the danger and taught how to avoid it. It is of vital importance that the schools should be utilized to disseminate information of such moment to the community, especially as civic corporations and boards of health are slow to act in such matters.

QUESTION DEPARTMENT.

Miss Anna B. McKenzie of Spencer's Island, writes:

1. About three weeks ago a young lady of this place brought in some ferns. She put them in a tumbler of water and set them in the window. She kept putting fresh water into the tumbler as it was needed. This morning we discovered in the tumbler an angle worm about four inches long. We would like to know where it came from. Perhaps some of your readers would favor us with the information.

2. Do you know of any work on natural science which would be of any help to the teaching lessons in a miscellaneous school?

The discussion of the first subject we leave to our correspondents.

In reply to the last question we regret to say that we have never seen our ideal book of Nature Lessons. We may, however, name a few popular books that would be useful:

Paul Bert's First Steps in Scientific Knowledge; price 75 cts. Clapp's Observation Lessons on Common Minerals; price 30 cts. Eberhart's Outlines of Entomology; price 45 cts. Gilman's Science; price 50 cts. Information Lessons on Common Things; price 50 cts. Rick's Natural History Object Lessons; price \$1.50.

G. S., P. E. ISLAND. Your questions 1, 2, 3, need only a little application to solve. No. 4, from Hamblin Smith, page 197, Ex. 5:

If R represent the rate per cent.

$$\text{then } 7600 \times (1 + \frac{R}{100})^2 = 9196$$

$$(1 + \frac{R}{100})^2 = \frac{9196}{7600}$$

$$1 + \frac{R}{100} = 1.1$$

$$\frac{R}{100} = .1$$

$$R = 10, \text{ rate per cent. of increase.}$$

[This is of course an exercise in algebra, and should not appear in an arithmetic. If the reader has any difficulty in following the above solution, let him regard this as an exercise in compound interest where the rate is asked for and the time is two years.]

GRAND MANAN: Please solve from Hamblin Smith, page 217, section IV., exercise 4.

Let him invest \$73; the interest will be \$3; this, together with another \$73, is invested; then at the end of the second year he will have invested \$73 + \$73 + \$3 and he will receive interest on \$149 at the rate of \$3 for every \$73 or \$6 $\frac{2}{3}$. He will have in all \$149 + 6 $\frac{2}{3}$ = \$155 $\frac{2}{3}$.

\$155 $\frac{2}{3}$ arises from \$73 invested

| | | | | |
|------|---|---|-------------------|--------------|
| 1 | " | " | 73 | " |
| | | | 155 $\frac{2}{3}$ | |
| 1085 | " | " | \$510.59 |invested |

For ENQUIRER:

(1) Hamblin Smith's Arith. page 165, Ex. iv. 4.

Time lost in 24 hours = 3 $\frac{1}{2}$ min.

" " 118 $\frac{1}{4}$ " = 15 min. 36 $\frac{1}{8}$ sec.

The watch was 10 min. too fast. It will therefore on Saturday be 5 min. 36 $\frac{1}{8}$ sec. too slow.

(2) page 165, Ex. iv. 5.

290 min. on the watch = 300 min. true time.

300 " " " = 5 hr. 10 $\frac{1}{4}$ " "

again 310 " " " = 300 min. " "

300 " " " = 4hr. 50 $\frac{1}{4}$ " "

(3) page 165, Ex. v. 1.

For every idle day he lost \$2.00 also \$1.50, in all \$3.50

If he had worked every day he would have received \$120; but he received only \$92. Therefore he lost \$28, which at \$3.50 a day would take 8 days.

Therefore he worked 52 days.

BERG NEIDECK VON W. H. RIEHL, with introduction and notes, by C. B. Wilson, M. A., Ginn & Co., Boston, pp. 86., price 35 cents. This is an interesting story under the form of an historical novel, "The hero is a German school-master whose innocence, purity and idealism make the reader love him." The text is well suited for sight reading for second and third year students. Eighteen pages of judicious notes help the beginner over difficulties.

GUIDE TO THE STUDY OF COMMON PLANTS, by Volney M. Spalding, Professor of Botany in the University of Michigan, pages 246; price 85 cents; publishers D. C. Heath & Co., Boston. This is a good work for pupils of the high school or to students who have some elementary knowledge of plants. Beginning with the seed it takes up the growth of the plant, from the seed onward to the fruit. The greater part of the work is taken up with observations on the natural groups of plants beginning with the lowest forms, proceeding to the flowering plants, of which the principal families and their characteristics are described. The work is valuable from the fact that from beginning to end it is made up of practical exercises, based on the study of the plants which must be in the hands of the student.

BOOKS RECEIVED.

Schiller's Wilhelm Tell, with introduction and notes by Robert Waller Deering, Ph. D., Boston, D. C. Heath & Co., publishers.

Practical Methods of Microscopy, by Charles H. Clark, A. M. Publishers D. C. Heath & Co., Boston.

A Brave Baby and other stories by Sara E. Wiltz, Ginn & Co., publishers, Boston.

Principles of English Composition, a text-book for senior classes of elementary schools and for pupil teachers, by P. Goyen, Inspector of schools. London, MacMillan & Co., New York.

Theory and Practice of Teaching, by David P. Page; *Memories of Ascham and Arnold*, by James H. Carlisle. C. W. Bardeen, Publisher, Syracuse, N. Y.

The April Magazines.

In the Contributor's Club of the *Atlantic Monthly* a writer recalls with evident longing the old fashioned country school, where there was no "getting through" no "grading" no "course of instruction."

Mrs. Florence Earle Coates contributes to the *April Century* a biographical and critical paper on Matthew Arnold, dealing with his literary and religious influence; and a portrait of Mr. Arnold, engraved by Tietze, is published as the frontispiece of the number.

In *St. Nicholas*, "The True History of the Flood" is a delicious bit of satire at the expense of a certain "Jacky" who forgot to turn off the water, and thus caused the bath-tub to overflow during the prolonged absence of his family from the city. It will repay reading by all who are severe upon boys for such faults.

In the *April Forum*, President G. Stanley Hall, of Clark University, publishes the first of a brief series of articles on real university work in America, and our facilities for training higher teachers, in which he speaks very frankly, even radically, of present educational methods and tendencies.

In *Littell's Living Age* for April 7th, there is a very interesting and instructive article on "The Significance of Carbon in the Universe" by Sir Robert Ball, F. R. S.

The personality of a famous man can at times be brought delightfully close to us, and this is particularly true of the picture we get of Nathaniel Hawthorne in his youngest daughter's description of "My Father's Literary Methods," in the *March Ladies' Home Journal*.

In this era of cheap magazines it has not been found necessary to reduce the price of *The Chautauquan*, for it has long been one of the cheapest and best of our monthly periodicals. Its contents always abound in attractiveness. Its illustrations comport with its contents, and its contributors are among the most accomplished writers in the world. In the twelve numbers of *The Chautauquan* there are no less than fifteen hundred pages of solid reading matter. The subscription price of *The Chautauquan* is \$2 00 per year. In clubs of five or more, to one address, \$1.80. Meadville, Pa., Dr. T. L. Flood, Editor and Proprietor.

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