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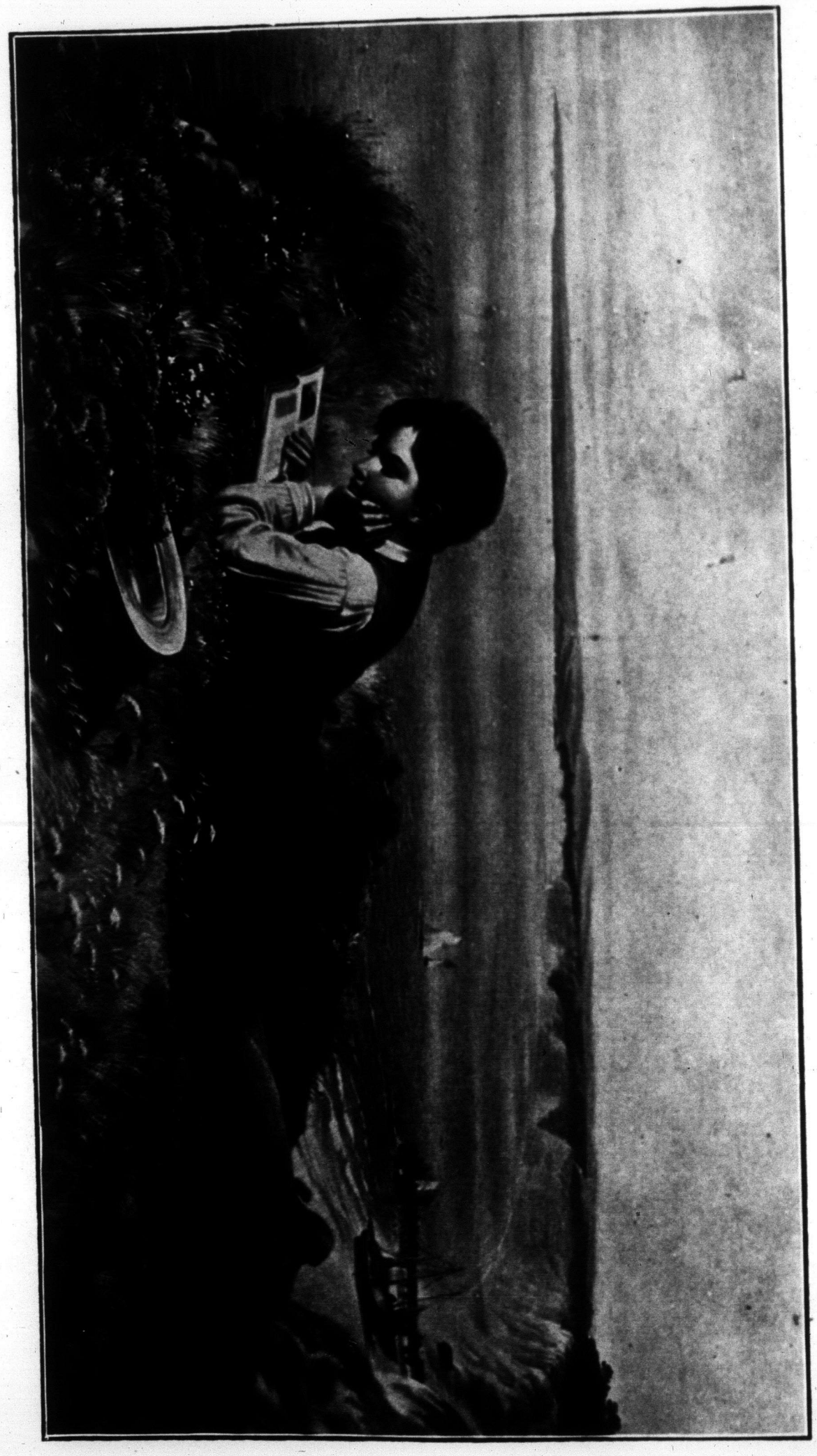

ABSORBED IN "ROBINSON CRUSOE."

—From a painting by R. Collinson.

The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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THE EDUCATIONAL REVIEW,
St. John, N. B.

The second quarter of the Nova Scotia school year begins November 14th.

We may be so taken up with present day problems that the past has for us but a fleeting interest. But let us remember that what we most enjoy in our natural scenery—the plants, the birds, the butterflies; the swelling contours of mountain and hill, the verdant meadows, the picturesque glens and valleys have a history of absorbing interest if we could but understand it. Let us read the story of Acadia's past, described in Dr. Bailey's picturesque style in this number of the REVIEW.

At least one evening of a teachers' institute should be given up to a general social, where teachers and citizens may meet and mingle. One such is in memory:—A cheerful cozy room, well lighted and decorated with flowers; the sound of animated conversation—no matter if they did talk "shop;" a chairman who said many pleasant things but did not make a speech. A public educational meeting is inspiring and stimulating where speeches are to the point, but deliver us from prosy and reminiscent speeches with the inevitable tired but patient listeners.

In the spring of 1907 a conference of the heads of educational departments of the Empire was held in London which was of great importance as it brought together leaders in Great Britain and the colonies, made them personally acquainted with each other, and led to the discussion of educational questions common to all. It was proposed to continue this conference every four years, and the spring of 1911 will witness a similar gathering in London. Nova Scotia and New Brunswick were represented by their superintendents of education in 1907, and they no doubt will be next year. Dr. A. H. MacKay, of Nova Scotia, has suggested the following topic for discussion: The Consideration of the Attitude which Departments of Education throughout the Empire should take with reference to the Simplification and Improvement of English Spelling.

The death of Mrs. Alex. G. Russell, daughter of Dr. J. B. Calkin, of Truro, formerly better known to our readers as Mrs. Sara B. Patterson, on the 25th October, was heard with a feeling of the deepest regret. She had endeared herself to a wide circle of friends no less by her superior qualities of mind than by a charming and lovable personality. She possessed to a high degree the teaching spirit, and in kindergarten work to which she mainly devoted herself the best powers of her mind and nature seemed to be called forth. A conscientious teacher, a warm friend, a worker in every good cause, she will be sadly missed from a devoted family circle and from friends who will cherish her worth in loving memory.

Forests and Floods.

It has been an interesting topic of instruction on arbor days in schools and at forestry conventions that the cutting down of forests has led to a decrease in the rainfall and an increase in the strength and frequency of floods during rainy seasons. Mr. Willis L. Moore, chief of the Weather Bureau, at Washington, now comes forward with the remarkable statement that forests have no effect either upon the amount of rainfall or upon the severity of floods. He seems to reach this conclusion by a variety of statistics based upon facts observed both in the United States and Europe. He thinks that the true cause of floods in main streams and tributaries is the continuance of heavy rain after the ground has everywhere been saturated, or when heavy warm rains come on the top of deep snows; that the cultivated soil outside of forests, when plowed and broken down to a depth of eight inches, acts as a sponge to retain water quite as well as does the ordinary humus of a forest; that our rainfall is dependent on such inexhaustible and permanent sources at the aqueous vapors raised from the vast waters to the south and southeast of our continent and cannot be appreciably affected by the planting or cutting away of forests; and that forests should be preserved for themselves alone or not at all.

Those who are interested should read Mr. Moore's pamphlet, published at the Government Printing Office, Washington. Those who have taught and argued the opposite may protest vehemently against his conclusions but he seems to have the weight of authority in his favor.

The Fruits of Pluck.

In looking over the splendid exhibit of the N. B. Fruit Growers' Association, recently shown at St. John, one was struck with the fine color and apparently good quality of the fruit; and also with the character and intelligence impressed on the faces of the men and women who in the face of many obstacles had worked with brain and hand to reach this quality of perfection. One was also impressed with the generous assistance and encouragement given by instructors and orchardists from Nova Scotia and Ontario in the lectures and talks given before the Association. This hearty co-operation and helpfulness is the prevailing spirit of this age, and it is a good spirit.

Speaking of obstacles to successful fruit growing President C. N. Vroom said that a man who is not prepared to meet some set back had better seriously consider if some other vocation in life would not suit him better, a remark that might be taken to heart by people in other walks of life. Referring to some difficulties of the fruit growers he said:

It would seem sometimes that all the forces of nature, animate and inanimate, were arrayed against us. The frost and the sun combine to take the life from the feeding roots of the tree, to strip the bark from the trunk or to trim back unmercifully the season's growth of wood; the cruel wind takes off branches, destroys the blossoms, or denudes the tree of fruit.

The fungus attacks both tree and fruit, the ground mouse girdles, the rabbit cuts, while legions of insects seem to prefer the apple to any other tree that grows. The borer starts at the ground and riddles the life out of the tree, the bark louse sucks it out higher up, the tent caterpillar, the red hump, the fall web worm, the leaf roller, the green aphis, the blister mite, and the brown tail show their good taste by exhibiting a decided preference for the apple. The codling moth, and the apple magot are after the fruit and if they leave any junior humanity steps in to fill its pockets and is often supplemented by senior humanity which fills its meal bags.

The fruit grower of today must have pluck, perseverance and determination in an eminent degree.

November Skies.

November is the month to begin the study of the heavens. Low down in the east about half past eight in the evening Orion may be seen just above the horizon. Above may be seen the V-shaped Hyades with the bright red star Betelguese, and still farther up the Pleiades, which represent, in classic mythology, the seven daughters of Atlas. Only six can be seen with the naked eye, the seventh, Merope, concealing herself for shame because she married a mortal! Above the Pleiades is Aries or the Ram, the first of the twelve signs of the Zodiac, which the sun enters on the vernal equinox, about the 20th of March. The large yellow planet Saturn, is now in Aries and is brighter than any star of that group. Farther up is Andromeda distinguished easily by its great nebula, visible to the naked eye, one of the most remarkable sights in the heavens in the autumn and winter skies. Directly above and close to the Zenith is the great square of Pegasus, its three brightest stars with the brightest star in Andromeda forming an extensive square. Pegasus was the winged horse in fable, a blow of whose hoof is said to have opened the

fountain of the Muses on Mt. Helicon; hence in modern times associated with poetic inspiration, as in the line, "Each spurs his jaded Pegasus apace," which may imply that the writing of poetry is attended with weariness of spirit.

A few months ago when Halley's Comet was visible the heavens were scanned by eager gazers in early morning and evening. The clear skies are as full of wonders now as then. Why do not all our readers, like the few, take a delight in studying the groups of stars and planets and notice the changes in their position throughout the heavens in the course of a year? A fresh interest would be opened to them every day by even a few minutes' study. The REVIEW has from time to time given some attention to this important subject—the geography of the heavens. This month it has briefly named a few constellations that now appear in the eastern horizon extending to the zenith. In future numbers it will outline the constellations in other portions of the sky. By giving a little at a time that can be easily mastered, teachers may become interested and arouse an interest in their scholars.

Household Science and Manual Training

Following a recent visit of the Director of Household Science, sewing is to be introduced in some of the grades of the Sackville, N. B., public schools. For some years past, by arrangement between the public school trustees and the authorities of the Ladies' College, the public school girls of the upper grades have been given regular courses in household science in the finely equipped college department devoted to the subject. This instruction is now to be extended as indicated above; the household science instructors taking charge of the sewing course.

Under the direction of the manual training instructor of the Sackville public schools, the pupils of every grade have for some time past received a weekly lesson in some form of manual activity. The instruction is given largely by the grade teachers themselves; with the counsel and assistance of the manual training teacher. A similar scheme is now in its second year of successful operation in the Fredericton city schools, and also in some of the consolidated rural schools.

Suggestions for Studying Macaulay's Essay on Addison.

BY ELEANOR ROBINSON.

[A good annotated edition of the essay will be useful. The following can be recommended: "Macaulay's Essays on Milton and Addison," edited by I. G. Croswell. (Longman's English Classics,) Longmans, Green & Co., N. Y., 50 cents. "Essay on Addison," edited by A. P. Walker, D. C. Heath & Co., Boston., 25 cents. "Essay on Addison," Riverside Literature Series, Houghton, Mifflin & Co., Boston, 15 cents. The first named is particularly valuable. The Palmer Co., 50 Bromfield street, Boston, publish a series of "Outline Studies in College English," including an outline of this essay, at 15 cents each.]

This essay is called by Thackeray "a magnificent statue of the great writer and moralist of the last age, raised by the love and marvellous skill and genius of one of the most illustrious artists of our own." The beginner is advised to read it straight through without stopping, if possible, in order to get the sweep and flow of Macaulay's narrative. When this is done, a careful study may be attempted.

Date and First Appearance.—1843. One of the famous series of essays, historical, critical, controversial, written for the "Edinburgh Review," 1825-1844.

Subject Matter.—Partly biographical, partly critical, as the title, "The Life and Writings of Addison," imports.

Method of Treatment.—Professedly a review of a book, "The Life of Joseph Addison," by Lucy Aikin. Plan: a common one of Macaulay's. Opening paragraphs devoted to author, her qualifications, or lack of them, for writing the book. Rest of essay a pouring forth, from a full mind, of Macaulay's own information, opinions, and feelings on the subject of Addison, and (incidentally), on other subjects, with running comments on, and corrections of, statements made in the book.

Verify this for yourself. What are some of the other subjects?" On your second reading, write down in a single sentence or phrase, the topic of each paragraph. From this list, when you have finished, make an analysis of the whole essay, as regards subject-matter, grouping together paragraphs dealing with each subject., *e. g.*, Sections 4 and 5, Reviewer's opinion of Addison, (*a*) as a man; (*b*), as a writer. Sections 6-9. Biographical. —Addison's father. His birth and childhood. His university life. After a second reading make summaries (from memory, if possible), of (*a*)

Addison's life as a whole; (*b*) his public career—as an author—as a politician; (*c*) Macaulay's opinion of his character; (*d*) of his poetry; (*e*) of his prose; (*f*) the history of the "Spectator;" (*g*) Addison's travels. Other topics will suggest themselves.

"Macaulay's fund of information, historical and literary, seems inexhaustible." Make a list of the subjects, *indirectly* concerned with Addison, of which he treats. Another, of the writers whom he names. A third, of the places of which he writes familiarily. What were his qualifications for writing thus? Compare what he says of Miss Aikin in paragraph 3. What do you know of his studies, or general reading? of his travels? Was he especially qualified to write on the times of Addison?

Inform yourself as to the main facts of English history from 1672-1719; on the lives of Addison's more famous contemporaries, *e. g.*, Dryden, Pope, Steele, Marlborough, Bolingbroke, Swift, Montagu,

Read Thackeray's lectures on "Congreve and Addison," "Steele," and "Swift," in "The English Humorists of the Eighteenth Century;" and the chapter in "Henry Esmond," book II., ch. 11, "The Famous Mr. Joseph Addison." Johnson's "Addison," in his "Lives of the Poets." The papers from the "Spectator," named in paragraph 99 of the essay. A good edition of the "Spectator" is edited by Henry Morley in one volume, (Routledge, London and New York, about $1.00), or "The Sir Roger de Coverley Papers," (Riverside Literature Series, Houghton, Mifflin & Co., 40 cents; also by Morang & Co., Toronto, same price). "Addison," in English Men of Letters, (Harpers, 75 cents). "A History of Eighteenth Century Literature," Edmund Gosse.

These additional readings are suggested for those who have time and opportunity. But don't think them obligatory, and be discouraged. You can do admirably with only the text of the essay, a dictionary, and an English history. In the next issue there will be some notes on Macaulay's style. The writer will be very glad to receive any questions on the essays, and will answer them as she best can.

We shall soon be independent of coal as a source of energy. This is the opinion expressed by Prof. Fessenden, a Canadian engineer before the British Association. He claims to have discovered a system by which power can be stored cheaply, so that wind-power and the energy derived from the heat of the sun's rays can be made to furnish all the power that is needed in addition to that derived from natural waterfalls.

VII. Acadia in the Ice Age.

By L. W. Bailey, LL. D.

(Continued from June.)

The Tertiary age, referred to in the last chapter of this series, was described as a period of almost tropical warmth, even in high latitudes. This is shown by the occurrence in Greenland and Spitzbergen of the remains of such plants as oaks, beeches, poplars, walnuts, magnolias and redwoods, while England was a land of palms—Greenland, so called in derision, being then indeed green in something more than name. That it could ever have been such is truly marvellous, but not more so than the fact that our own Acadia, and with it nearly one-half of the whole continent of America, should once have been buried, as is Greenland today, beneath an icy mantle hundreds, perhaps thousands, of feet in depth. Yet this belief is based upon evidence as clear and indisputable in the one instance as in that of the other. Let us look at the facts.

Have my readers ever noticed the great numbers, and in many instances the large sizes of the fragments of rock, usually known as boulders, with which every part of the Provinces is strewn, and which, in some localities, as about Macadam or Windsor Junction, cover the surface so completely that hardly anything else can be seen Are these the results of the breaking up of the rocks beneath? Not at all. Rarely do they correspond to the latter, and in many instances it is easy to show that these boulders have been brought for miles or hundreds of miles from their parent beds. Around Fredericton may be found boulders of the iron ores of Woodstock, and even occasionally some from the Laurentian hills north of the St. Lawrence. The granite boulders of Macadam, strewn over a region of slates and quartzites, must have been derived from the granite hills to the northward of them. The peculiar and easily recognized rocks of the mainland about Passamaquoddy Bay are found lying on the totally different rocks of Grand Manan. The equally peculiar volcanic rocks of the latter island and of the North mountains are strewn in thousands all over the southwestern coasts of Nova Scotia. In some instances the boulders are as much as thirty feet in diameter and would weigh hundreds of tons. Obviously ordinary running water, the chief geological agent in earlier periods, would be quite incompetent to produce the transport of blocks such

as these and to such distances. The only agency we can look to is that of ice, and this we find actually producing such results in various parts of the world at the present day. One has only to go to Switzerland, to the Himalayas, to Alaska or to Greenland, to witness precisely similar effects, and it is a great geological principle that like effects must be referred to like causes. Ice, therefore, in the form of glaciers, must once have been active wherever the results of that action are clearly recognizable, and Acadia must, at some time in its history, have been submitted to glacial conditions. Almost tropical warmth must have been followed by a lengthy period of arctic cold.

It has been supposed by some that the transportation of boulders was due to the action of icebergs rather than of glaciers. But the Province of New Brunswick affords some striking facts which favour the latter rather than the former as the real agents concerned in these results. It is true that icebergs have great transporting power and annually drop large quantities of material along the bed of Baffins Bay and the Straits of Belleisle, but, apart from the fact that icebergs pre-suppose glaciers, being, in all instances the broken-off feet of the latter, there are occurrences observed which are hardly to be explained upon any other supposition than that they are due to the operation of land ice. One of these is the occurrence of large boulders of bituminous shale picked up from the valley of the Coverdale River in Albert county and dropped on the top of Caledonia Mountain at an elevation nearly one thousand feet higher. This could hardly be accomplished by a floating iceberg. Again, on the western side of Chamcook Mountain, near St. Andrews, N. B., of which the face is nearly vertical, the volcanic rocks which form the upper portion of the eminence may at one point be seen to project horizontally for fifteen or twenty feet beyond the comparatively soft red sandstones which form its lower half, and yet the *under* side of this projecting ledge is completely covered with glacial markings which could only have been produced by a mass of land ice crowded against the face of the bluff and not by a freely floating berg.

But this leads us to another class of facts. What are the glacial "markings" thus referred to? Well, they are lines or scratches crossing the face of the rock in parallel directions as though they had been produced by some gigantic rasp. Such lines or striae are common all over Acadia. Wherever the overlying soils have been freshly removed and the rocks have been hard enough to preserve them, we find these similarly scored, sometimes very beautifully. Fine examples may be seen upon some of the islands of Miramichi Bay, and still better ones at many points along the Atlantic coast of Nova Scotia. Here indeed they are, in some instances, much more than mere scratchings or groovings of the surface. They are deep furrows, and at one point, near Lockeport, they are great troughs, varying from three or four to ten feet in depth. Such troughs, smoothed and rounded like the body of a canoe, yet striated from end to end, could never have been produced by floating ice. They are the work of an uncommonly heavy moving mass. They mark the course and the action of the great glaciers which then covered the whole of Acadia as they were slowly sliding southward on their way to the sea.

The course of the striae is always southward, generally a little east of south, and as the transportation of boulders was generally in the same direction, it is evident that both owe their origin to a common cause. Striated surfaces, similar in every way to those here described, are a common feature in glacial regions such as have been referred to, and as they are found upon the summits of our highest hills it is evident that the whole surface of the land was covered with what may well be regarded as a continental glacier. And as in Alpine regions, the sides of glaciers are usually marked by what are known as moraines, *i. e.*, by confused masses of rock which have descended as avalanches from the bordering hills or have been piled up at the glacier's foot when the ice melts away; so in both New Brunswick and Nova Scotia the boulders are often arranged in trains or are placed so as to show that they represent lateral or terminal moraines. Both the moraines and the striae show little correspondence with the present inequalities of the surface, crossing valleys like that of the St. John transversely to their course, and, as we shall see later, sometimes serving to change the course of smaller streams into totally different channels. In other instances they probably both deepened and widened pre-existing channels, and such north and south gorges as those of Digby Gut and the Petite Passage, as well as the fiord-like indentations of the southern coasts of both Provinces, including such harbours as those of Halifax and Shelburne, may owe their origin in part to this cause. Many of

these fiord-like valleys, as indicated by soundings, extend southward far beyond the position of the present coast line, and thus show that they were produced when the land stood at a considerably higher level than now.

One naturally seeks for the causes of all these wonderful changes. Various theories have been advanced, but the most probable explanation is to be found in the view that they were due to the elevation of the earth's crust in high latitudes. Such an elevation, even if only of a thousand feet or so, would, even at the present time, have the effect of bringing the northern continents closer together, and of obliterating, or nearly so, the ocean channels which now lie between them. Northern Europe would, through Spitzbergen, Iceland and Greenland, become continuous with North America. The warm current of the Gulf Stream, which now modifies so greatly the climates of England and Norway, would then be confined to more southerly latitudes, and though the moisture-laden winds from the latter would still flow northward as now, their moisture would be condensed not as fog and rain, but as snow, and this would tend to constantly accumulate until in time the conditions which now prevail in Greenland would have spread over regions far south of the latter. A winter of indefinite duration and of extreme severity would set in. The snow by pressure of the ever-increasing supply would become converted into ice. The ice-cap, thickest at the north, would by the same pressure be forced outward, and in the form of a great glacier, similar to that which now covers the semi-continent of Greenland, would produce all the effects described. How long this set of conditions prevailed we know not. It may have been for hundreds or thousands of years, but the evil had in itself its own remedy. The accumulation of such vast quantities of ice in polar latitudes, with its resultant weight, would tend to disturb the rigidity of the surface on which it rested. This surface would begin to sink, and by sinking would again be brought more or less completely below the sea level. The warm ocean currents would again resume their former course. The climate would become ameliorated and the ice-cap would retreat again to its present northern limits. Proofs that there was such an elevation, in itself a cause of cold, are, as has been stated, to be found in the depth to which river channels and fiords were then excavated; and there is equally strong proof that this period of elevation was followed by a time of depression carrying the surface even below its present level. For our rivers, like the St. John, are now flowing in channels which were once far deeper than they now are, and which must have been partially filled up during such period of depression. The present bed of the St. John at Fredericton is at least two hundred feet above its former one, the intervening depth being occupied by river clays in which the remains of fossil fishes have been found, and this is only one among many similar instances. On the coast, also we find old sea-beaches, like Pennfield Ridge in Charlotte county, N. B., filled with marine shells which mark a former depression of two hundred feet or more.

And now we may inquire what became of the almost semi-tropical life which, as described in the preceding chapter, spread over all the region in the Tertiary age which went immediately before. Well, evidently it could not withstand the rigours of the glacial era. As the conditions of the latter came slowly on, such forms as could do so migrated southwards to warmer latitudes, while those which had no power to thus migrate inevitably perished. Want of food, following the disappearance of the forests, would alone be sufficient to proclaim such a result. Arctic and sub-arctic species such as are now found flourishing in sheltered spots along the southern edge of the polar ice-cap, would advance with the latter and again retreat with its return. And here a very curious incident may be referred to. Elevation in altitude is, as is well known, so far as a fall of temperature is concerned, equivalent to difference of latitude. Hence, therefore, as the ice retreated, many forms of life, suited to cold conditions, would find on high mountain summits, the same surroundings as those found at much lower levels in Arctic regions. When therefore, the main army of Arctic forms, following the retreating glaciers, returned to their northern home, some stragglers from that army would continue to linger on the mountain sides only to be eventually cut off or isolated by the increasing warmth of the intervening valleys. Thus we find colonies of Arctic butterflies still resident on the higher summits of the White Mountains identical with those which are now only to be found flitting about the ice-clad shores of Greenland. Truly a remarkable occurrence. Plants of Arctic types are also to be found along the Bay of Fundy coasts similar to what are found on the tops of the White Mountains and

in Greenland, but here the prevalence of fogs and the generally low temperature have probably had something to do with the result.

Of course as the ice gradually disappeared and more genial conditions returned, life also returned, and plants and animals of many kinds again began to people this Acadia of ours, and with them man probably made his first appearance; but the consideration of these topics must be reserved for another chapter.

One other subject must be referred to here to make this chapter complete. At many points both in New Brunswick and Nova Scotia, one meets with long, low ridges of gravel and sand, rising abruptly from the general surface and looking like great railway embankments, frequently just wide enough upon the top for the passage of a roadway, and not unfrequently used for that purpose. These are what are known to geologists as kames or eskers, and probably owe their origin to sub-glacial streams, such as are found in Switzerland and elsewhere issuing from beneath great masses of ice. In New Brunswick one of the most remarkable of these is to be seen about the chain of the Eel River lakes, in York county, having a length of seven or eight miles, while in Nova Scotia a similar ridge extends from Hectanooga, near Yarmouth, eastward far into the county of Queens, a distance of nearly thirty miles. They are sometimes known as "hog-backs." Another peculiar condition, and one related to the kames, is that of "drumlins." These are groups of low hills, composed like the kames of gravel and sand, with occasional boulders, but irregularly arranged, and of dome-like form. Fine examples may be seen around the town of Lunenburg. They are usually more or less elliptical in outline and their longer axis shows the direction of the ice movement by which they were produced.

Our lady teachers will marry but all are advised to do as this teacher has done, transfer the REVIEW to a sister, or to a friend: Kindly discontinue my subscription to your valuable REVIEW and transfer to my sister. I have taken a smaller school and household duties now claim my attention. . . I gained much help from the REVIEW while teaching and I could not have carried on my work so well without it.

E. C.

Teachers' Conventions.

KINGS-QUEENS, N. B., INSTITUTE.

The twenty-seventh annual session of the Kings-Queens Teachers' Institute was held in the high school building, Sussex, Kings Co., on Thursday and Friday, September 29th and 30th, with one hundred and one teachers enrolled.

President M. G. Fox gave a very excellent opening address; he emphasized the need of trained teachers, and dwelt at some length on the subject of agricultural education.

Mr. J. B. DeLong, B. A., principal of the Hampton Consolidated School, read a carefully prepared paper on Reading and English Literature. The paper was discussed by G. N. Belyea, A. B.; W. T. Denham, A. B.; and Rev. F. Baird, B. A., all of whom spoke in fitting terms of its many excellences. On motion, it was resolved that the Secretary of the Institute have Mr. DeLong's paper published.

Miss Bessie Parker gave a lesson in music to a class of children, which brought forth much praise from the Institute, and Dr. W. C. Kierstead, of the U. N. B., complimented the people of New Brunswick on having such a splendid school system.

Mr. T. B. Kidner, Director of Manual Training, gave a thoughtful address on manual training and domestic science in miscellaneous schools. Mr. Kidner spoke of the progress of these two subjects of the course and their possibilities in the rural schools. He hoped soon to see them more widely established. Mr. W. W. Hubbard, Secretary of Agriculture, and Dr. D. V. Landry, Commissioner of Agriculture, each made short addresses, in which they spoke of the needs of a better agricultural education.

At the public meeting President Fox was in the chair. Mr. J. A. Murray, M. P. P., delivered a neat speech of welcome, after which able addresses were delivered on the educational question by Dr. Landry, Dr. W. W. Andrews, Professor Cummings, W. W. Hubbard and Inspector R. P. Steeves.

On Friday the Institute divided into sections. In the Primary Section lessons were taught as follows: Science, by Miss Maggie Gilchrist; Tables and Number, by Miss Alice Belyea; and Primary Work, by Miss Mary E. Archibald. In the Intermediate the following lessons were given: Definition of an Adjective, by Miss Bessie Parker; Signs, by H. A. Garland; Definition of a Pronoun, by Miss Nora Fairweather; Definition of a Fraction, by Miss Gertie E. Sisson; and one on Addition of Fractions, by Miss Bertie Darrah. In the Advanced Section two papers were read, one on Science, by Miss Muriel DeMille, and one on Reading, by Miss Lena Wilson. A lesson in Geometry was taught, by Miss Clara Hay. In the Trustee's Section three addresses were given, viz.: By the Chairman, Geo. Raymond, Esq.; The Trustee as the Teacher Sees Him, by W. B.

Jonah, B. A.; How the School Trustee May Promote the Better Education of the Farmer, by O. W. Wetmore; and Farm Book-keeping, by G. G. Scovil.

At the last session which convened at 2 p. m., September 30th, Mr. Norman J. Fraser, B. A., read a paper on Fall Plants, and Mr. Charles Wetmore taught a lesson on Commercial Geography. The work of the Institute was next summed up in a very neat address by Miss Clara Hay, of the Sussex high school.

The following officers were elected: President, J. B. DeLong, B. A., Hampton; Vice-President, Frank Blake, Norton; Secretary-Treasurer, W. N. Biggar, Sussex; Additional Members of Executive, Miss Hattie McMurray, Rothesay; and Miss Clara Hay, Sussex. The next session will be held at Hampton.

Northumberland County Institute.

The thirty-third annual session of the Northumberland County Teachers' Institute was held in Newcastle, Thursday and Friday, with President B. P. Steeves in the chair. In his opening address Principal Steeves pointed out that there were two movements above all others conspicuous in American schools. The tendency to emphasize study of practical subjects and the tendency to give language the most prominent place in all grades. Inspector G. W. Mersereau considered practical subjects most beneficial. Many subjects must be combined or correlated. He believed that Latin, algebra, etc., should be eliminated from the common school grades and their study begun in the high school. The three evils of our school are: Cigarettes, the penny novels and the moving pictures. Mr. Mersereau advanced many practical suggestions. He said that the present day scholars cannot think as pupils of the last generation could. There may be too many subjects. But what is taught, teach well.

In the course of a scholarly paper on expression, Principal C. J. Mersereau, B. A., spoke of certain faults and their remedies, such as crudeness of expression found in advanced grades, faulty articulation, monotonous tone, faulty co-ordination and subordination of clauses, lack of vividness and originality in expression.

Principal H. H. Stuart read an important paper on Ways and Means of Improving our Educational System, making the following recommendations among others—that provision be made for backward pupils, that manual training be made compulsory, that all schools should be graded, that no class lower than second should be licensed, and that the teachers' position should be made permanent. Miss Marion Fraser read an interesting paper on Life and Methods of Pestalozzi.

At Friday forenoon's session Prof. Hagerman, of the Normal school, treated the subject of drawing. He said that the subject must be taught—that the pupils could not be left to learn it from books or models, but must be taught to draw by the teacher—the teacher must draw in the presence of the children. Any teacher, he held, could learn enough drawing to do this. He traced the process step by step, showing how to use the books and models. Drawing, he said, is a child's natural expression, and copying at the beginning is fatal to the development of the learner's success in drawing. The child should draw dogs, cats, anything and everything, in its own way, so as to acquire facility with the pencil. When it finds itself, recognizes the crudity of its efforts and becomes dissatisfied with them, then teach it to draw carefully. Set it to drawing triangles, squares, circles, and more complicated figures till hand and eye become trained to accuracy.

In the afternoon an excellent paper on school management was read by Miss Mabel McGregor, of Newcastle. The writer and Inspector Mersereau condemned corporal punishment in school as wholly unnecessary, especially for pupils properly controlled at home.

Resolutions were adopted: In favor of consolidating rural schools wherever practicable; commending manual training, school gardening and household science; and asking that attendance be made compulsory for all schools, instead of its being left optional as at present.

Officers were elected as follows: C. J. Mersereau, President; Miss Jessie Fowlie, Vice-President; H. H. Stuart, Secretary; Norman Cass and Miss Mabel McGregor, additional members of Executive.

Albert County Institute.

The thirty-third annual meeting of the Albert County Teachers' Institute was held at Hopewell Cape, October 13th and 14th. Thirty-one teachers were enrolled. After the enrolment President Colpitts opened the Institute with a very excellent address, in which he extended a hearty welcome to Dr. Carter, Chief Superintendent of Education and the new teachers who had come into the county. He strongly advised the teachers to keep abreast of the times by reading the best obtainable books, papers, etc.

Mr. Colpitt's address was followed by a few remarks from Inspector O'Blenes, after which Dr. Carter addressed the Institute. He regretted the constant change of teachers, also the exodus of teachers to the West, and appealed to the teachers to remain in their own Province.

A very excellent paper was read on Physical Drill, by A. J. Kelly, who showed a close study of his subject, and gave a practical demonstration of the teaching of the drill. A paper on Literature, by G. J. Marr, Principal of the Hillsboro high school, was full of most helpful suggestions, which, if followed out would undoubtedly lead to a keener

appreciation of the beautiful things in our literature. Dr. Carter paid a high tribute to Mr. Marr, by asking for a copy of the paper to publish in the school report. Next was an excellent lesson on drawing, by Miss Jean Peacock, which called forth much favorable comment.

A public meeting was held at the court house in the evening, at which President Colpitts presided. Inspector O'Blenes was the first speaker, who in a short but excellent address prepared the way for the address that was to follow. Dr. Carter in his address appealed to the people to take more pride in their school premises, to furnish the schools with first-class modern apparatus and to take a greater interest in the schools. He dealt with the benefits of courses in physical drill, manual training, domestic science and school gardening.

In the morning session, Friday, the Institute was divided for the purpose of discussion of matters relating to school work. Many helpful hints were given in this session of the Institute. Friday afternoon the business matters relating to the Institute were settled. The following officers were elected: G. J. Marr, President; Miss Eliza Ward, Secretary; Miss Edna Floyd, Vice-President; Miss Alice Thistle and Miss Downing additional members of the Executive. The Institute will meet next year in Hillsboro.

West Colchester Institute.

The West Colchester Teachers' Institute was held at Great Village, N. S., on Thursday and Friday, October 13th and 14th. There were about forty teachers present, and the work was very helpful to them. The following programme was carried out: Reading, primary, Miss Morash; Primary work, Miss Cottle; Drawing, Miss Stevens; Physical Drill, Mr. Archibald and Mr. Morse; Nature Study, Inspector W. R. Campbell; Drawing, Miss Stevens; Talk on School Management; Question box; Language, Miss Fulton; Arithmetic, Miss Grant.

We Are Teaching Too Much.

Edwin Collins, a university graduate, a writer and a teacher, does not believe in teaching at all—that is in the ordinary acceptation of the term "teaching." His motto is that "children should be taught little and should learn much." His theory and practice are that no child should be asked to undertake formal lessons until it is nine or ten years old, and that until it reaches that age it should be allowed to run practically wild and assimilate knowledge as a flower gathers its sweetness from the sunshine.

"I do not believe in beginning to learn the formal things too early," says Mr. Collins. "Children should be encouraged to ask questions to learn rather than to be taught. My eldest boy could not read a line until he was nine years old. Then he learned the alphabet in a week and he learned it without any difficulty. He just asked his mother or me what the letters were and in a week he was reading for his own pleasure. Before, that, of course, we had to read to him poetry, Shakespeare's plays, and many other things which were suitable to his understanding. Since then he has read all of Shakespeare, several of the English poets, and a great deal of the finest English literature."

An Untidy School Yard.

The school yard was strewn with straggling sticks from the dislocated woodpile. Burdocks and ragweed asserted lustily their rights to the play-ground. Two clapboards were broken next to the front door. The schoolroom sweepings were freshly deposited at the sag end of the platform.

Do these conditions bespeak a good school? At least they did not give a favorable impression while riding by. Both teacher and school officers were to blame for such a condition of affairs. A "bee" would have piled up the wood and removed the weeds. A tidy teacher would have directed the sweepings to the stove. A thoughtful director would have put the house in proper repair. Was this your schoolhouse?—*The Moderator.*

A good country school may be made more nearly an ideal school than any other school. The pupils in the country are usually more tractable, more open to the teachers' influence, both in school and out of it, than are the pupils in cities or towns. Besides they are less liable to be distracted by disturbing influences, and their habits of industry and self-reliance are great helps to their advancement, both in acquiring knowledge and in whatever else enters into true education.—*School Herald.*

"The heart in the work" is not a motto for the artist alone; it is for the laborer as well. With that possibility before him, the meanest toiler may grow beautiful; without it, the veriest giant of energy will grow petty and warped and sad. The commonest work is ennobling when it provides any avenue of expression for the spirit, any exit for the heavy, struggling, ambitious human heart out of its prison house of silence into the sunshine of fellowship.—*Bliss Carman.*

For the Little Folk.

Troubles of the Small Boy.

Before they had arithmetic,
  Or telescopes or chalk,
Or blackboards, maps and copy books—
  When they could only talk;
Before Columbus came to show
  The world geography,
What did they teach the little boys
  Who went to school like me?

There wasn't any grammar then,
  They couldn't read or spell,
For books were not invented yet—
  I think 'twas just as well.
There were not any rows of dates,
  Or laws or wars or kings,
Or generals or victories,
  Or any of those things.

There couldn't be much to learn;
  There wasn't much to know.
'Twas nice to be a boy
  Ten thousand years ago.
For history had not begun,
  And the world was very new,
And in the schools I don't see what
  The children had to do.

Now always there is more to learn —
  How history does grow!
And every day they find new things
  They think we ought to know.
And if it must go on like this,
  I'm glad I live today,
For boys ten thousand years from now
  Will not have time to play!

Two ears and only one mouth have you:
  The reason, I think, is clear:
It teaches, my child, that it will not do
  To talk about all you hear.

Two eyes and only one mouth have you;
  The reason of this must be,
That you should learn that it will not do
  To talk about all you see.

Two hands and only one mouth have you;
  And it is worth repeating,—
The two are for work that you will have to do,
  The one is enough for eating.

—*From the German.*

Lots of men would leave their footprints
Time's eternal sands to grace,
Had they gotten mother's slipper
  At the proper time and place.

Johnny And His Lessons.

Little Johnny What's his name
  Was in the fifth A grade,
And 35's and 40's were
  The highest marks he made,
Excepting in arithmetic
  Where he'd made ninety-two,
Because he liked the subject well,
  As 'most all Johnnies do.

He took his books home every day
  As reg'lar as could be.
He played till dark, then went to bed,
  "From every care set free."
He said he had "no lessons home,"
  And thought the trick was new,
Until his father called at school
  And got a point or two.
That night he studied spelling, history, geography, language, physiology, arithmetic,
  With wondrous vim and care,
And home folks say he begged to have
  A pillow on his chair.

—*Journal of Education.*

A Riddle.

One little brother is short and slow,
  The other is tall, and he can run,
For he takes twelve steps with his longer leg
  While his brother is taking one.
One little brother a bell must ring
  With every step that he slowly makes,
But the other runs gaily from morn till night,
  Nor cares to notice the steps he takes.
He who loves riddles may guess this one,
  Who are the brothers and where do they run?

Who can guess the last name of these little brothers? (hand).

The tall brother has the long first name, and the little brother the short first name. Who can tell these?

Where do they travel?

Who runs faster? Why?

How many steps does the Minute Hand take while the Hour Hand takes one?

Which brother rings the bell? When?

Demonstrate with clock face.—*Selected.*

It is said of a noted Virginia judge that in a pinch he always came out ahead. An incident of his boyhood might go to prove this.

"Well, Benny," said his father when the lad had been going to school about a month, "what did you learn to-day?"

"About the mouse, father."

"Spell mouse," said his father.

"Father, I didn't believe it was a mouse after all; it was a rat."—*Lippincott's Magazine.*

Kitty Knew About Sheep.

Seven sheep were standing
By the pasture wall.
'Tell me,' said the teacher,
To her scholars small,
'One poor sheep was frightened,
Jumped and ran away.
One from seven how many
Woolly sheep would stay?'

Up went Kitty's fingers—
A farmer's daughter she,
Not so bright at figures
As she ought to be.
'Please, ma'am'—'Well, then, Kitty,
Tell us if you know.'
'Please if one jumped over,
All the rest would go.'

—Selected.

Recitation for a Little Boy.

A little man came to our house one day
From his home in the north, so far away;
And the breath he blew from his lips was light.
Yet it withered the flowers in a single night.

And he veiled the hills in a wonderful mist,
And the sumac blushed as its leaves he kissed;
And he dressed the trees in yellow and gold,
'Till the woods are brighter a hundred-fold.

Then the nuts fell down from the tree-tops tall,
And the birds flew south at their leader's call;
Then the bright leaves slowly dropped at last,
And we knew that the golden Summer was past.

—Anna Kennedy, in Child-Garden.

If you should see
A big green tree,
With candles all alight,
With popcorn strings
And pretty things,
And tinsel shining bright,
With stars that swing,
And bells that ring,
All green and red and blue,
And lots of toys
For girls and boys,
And lots of candies, too,
And you should hear
Somebody near,
Call out in cheery way:
"What sort of tree
Can this one be?"
I wonder what you'd say?

—St. Nicholas.

Autumn in his leafless bowers,
Is waiting for the winter's snow.

—John G. Whittier.

Seasonable Quotations.

There was a small boy of Quebec,
Who was buried in snow to his neck,
When they said, "Are you friz?"
He replied, "Yes, I is—
But we don't call this cold in Quebec."

—Rudyard Kipling.

"Not some great work,
But just a little place
Where I can work
And grow in daily grace."

—P. A. Naylor.

The little brook heard it and built a roof
'Neath which he could house him winter-proof;
All night by the white stars' frosty gleams
He groined his arches and matched his beams;
Slender and clear were his crystal spars
As the lashes of light that trim the stars.

—James Russell Lowell

The first train leaves at 6 p. m.,
For the land where the poppy grows,
And mother dear is the engineer,
And the passenger laughs and crows.

—Edgar Wade Abbott.

Never a night so dark and drear,
Never a cruel wind so chill,
But loving hearts can make it clear,
And find some comfort in it still.

—Mary Mapes Dodge.

The time draws near the birth of Christ,
The moon hid; the night is still;
The Christmas bells from hill to hill
Answer each other in the mist.

—Tennyson. In Memoriam.

When daisies go, shall winter time
Silver the simple grass with rime,
Autumnal frosts enchant the pool
And make the cart ruts beautiful;
And when snow white the moor expands,
How shall your children clap their hands!

—Robert Louis Stevenson.

The mountain ash, . . .
Decked with autumnal berries, that outshine
Springs richest blossoms, yields a splendid show
Amid the leafy woods.

—William Wordsworth.

When the winter is over,
The boughs will get new leaves,
The quail will come back to the clover,
And the swallow back to the eaves.

—Alice Cary.

Dear Heart, our lives so happily flow,
So lightly we heed the flying hours.
We only know winter is gone—by the flowers,
We only know winter is come—by the snow.
—*Thomas Bailey Aldrich.*

The cricket is singing his warning of snow,
And cold, dreary winds are beginning to blow.
—*Clifford Howard.*

Four bedquilts are yearly folded and spread
On Mother Earth's old trundle-bed.
The first, a brown and white old thing,
She puts on in the early spring,
The summer one is green and bright,
With four-o'clocks nodding left and right.
And then when the winds begin to blow,
She spreads a red quilt on, you know,
She sews it through with yellow thread;
It makes an autumn-leaf bedspread.
And by and by, all in a night,
She spreads her quilt of snowy white.
——*The Teacher.*

November.

Yet one smile more, departing, distant sun!
One mellow smile through the soft savory air,
E'er o'er the frozen earth, the loud winds run
Or snows are sifted o'er the meadows bare.
One smile on the brown hills and naked trees,
And the dark rocks whose summer wreaths are cast,
And the blue Gentian flowers, that in the breeze,
Nods lonely, of her beauteous race the last.
Yet a few sunny days in which the bee
Shall murmur by the hedge that skirts the way,
The cricket chirp upon the russet lea,
And man delight to linger in thy ray.
Yet one rich smile and we will try to bear
The piercing winter frost, and winds and darkened air.
—*Wm. Cullen Bryant.*

Trees bare and brown,
Dry leaves everywhere,
Dancing up and down,
Whirling through the air.
Red-cheeked apples roasted,
Popcorn almost done,
Toes and chestnuts toasted,
That's November fun.

"I tell you," said Tommy, eating his peach,
And giving his sister none,
"I believe in the good old saying, that each
Should look out for Number One."

"Why, yes," answered Sue, a dear little elf,
"But the counting should be begun
With the Other One instead of yourself,
And he should be Number One."

—*Southern Stories.*—

November Nature Lessons.

Much of the nature work this month should centre round the thought of the harvest. The children should make a list of the various fruits and vegetables that have appeared on the table at Thanksgiving and find out something about the way in which each is harvested. This will be easy for country boys and girls; those in the city will have to depend upon books for their information. The following list may be used and amplified as much as the teacher wishes.

Wheat.—This grain is cut with a scythe or machine and bound into small bundles or sheaves. Several of these are stacked together to dry. When dry the wheat is taken to the barn and threshed. Formerly the farmer threshed his grain by hand with a flail, but the work is now done by a machine.

Corn.—After the corn is cut it is tied into bundles and left on the field to dry. This sometimes takes weeks. The shocks are then taken apart; the ears are twisted off and husked. Some of the cobs are shelled and the loose grain stored in bins. Corn intended for the use of cattle is chopped up, plant and all, and stored in a special apparatus called a silo.

Potatoes.—The whole plant is taken up and the roots are arranged in piles according to size and stored for the winter in a cool, dark place.

Onions.—The plants are pulled and left in the

Carrots.—The whole plant is dug up, the green tops cut off, dried for a few hours and stored in a moist place.

field to dry for several days. Then the tops are cut off and packed in a dry place.

Beets.—The method of harvesting is like the carrots, but the tops of the plants must be trimmed instead of cut off.

Turnips.—The plants are pulled and dried, the rootlets and tops cut off, and stored in cellars.

Parsnips.—These vegetables are not good until after a frost and may be left in the ground all winter. If dug, the tops are cut off and the roots packed in earth.

Cabbage.—Just before the frost these are pulled and either hung up by the roots or buried in a trench, heads down.

Celery.—This is also dug late, just before the frost. It is either stored in a deep trench covered with earth and boards, or packed upright in boxes of earth.—*Selected.*

Winter is Coming.

One day Tommy's mother took him to the store to buy him a coat. She bought a little dark blue one lined with soft wool. "It will keep me warm when I go out in the snow," said Tommy. Tommy was a little boy, but he saw many things. He had seen the little blossoms come out of the buds, and the flowers come. He had seen the buds on the trees grow into leaves, he had seen the little wee birdies, and the butterflies, and the tiny worms and everything that lived out of doors.

So when Tommy had his overcoat, he looked up at his mother and said, "What do all the other little things do to keep warm?" Tommy's mother said, "We will put on our warm coats and go out to the park to see if we can find out."

The first thing that Tommy saw was a few leaves that stayed on a branch, and were all brown. Tommy's mother drew down the branch and showed Tommy the little brown house of a moth, where he was wrapped safely in strong brown tent-cloth that he had made himself. She showed Tommy how the moth had fastened his house to the branch, and how there were a few leaves around it so that it could not be seen. There the little fellow was all safe in his warm house for the winter.

Tommy's mother broke off the stalk and took it home, so that Tommy could see it in the spring, when it would come out a beautiful moth. Then Tommy's mother showed him the homes of the moths that were laid in the bark of the trees. She broke open an old log and showed him the brown, shiny ones, then she showed him the woolly ones until Tommy knew where all the little worms and caterpillars stayed when it was cold.

"What do the little fishes do?" said Tommy. Mother said, "We will ask the park gardener." The gardener told Tommy many wonderful things. "The frogs," said he, "go down to the bottom of the pond and sleep all winter. The toads burrow in the ground, the crayfishes crawl into a place down where it does not freeze, and they sleep, too. The fishes stay under the water, and sleep some, but the ice does not freeze to the bottom. The wasps crawl into their big nests, and when they wake a little they eat their honey that they have made during the summer. The bees do the same, but they do not wake often; they sleep almost all winter."

"What do the little ants do, and the squirrels?" said Tommy.

"The ants live in a hill," said the gardener. He went on to tell Tommy how the ants worked all summer and took in grains of wheat and the bodies of insects, and filled their cellars full of food. Then in the winter they stayed a long way underground where it did not freeze, and had plenty of food. The squirrels, too, he told Tommy, hid nuts in the ground and laid up food for the long, snowy winter. Their fur coats grew thicker and they slept much, too, and so they got through all right. The birds had thicker coats of feathers and those that did not go South ate seeds and many things that were thrown out and so had a pretty good time. The gardener told Tommy that the turtles slept at the bottom of the pond. The big bears slept, too, and they woke up in spirng and were so hungry that they could hardly wait till they could get something to eat.

When Tommy went to bed that night, he said, "I am glad that the little bugs, and worms, and butterflies, and squirrels, and toads, and frogs, and everything that lives out of doors have a nice warm place to stay in during the winter."—*Teachers' Magazine.*

Children's Reading.

A reader has asked for suitable books for children's reading. The following will be found interesting and good. The REVIEW would like to supplement this with others, and teachers will help this work on by sending us the names, prices and publishers of those books which have become favourites with their pupils.

For reading aloud to pupils in spare moments, or to put into the children's own hands, one can hardly do better than send to the Macmillan Company, Toronto, for a list of their publications of "Classics for Young People." Among the "Bright Story Readers," which cost from ten to fifteen cents each, we find, "The King of the Golden River," "Rip Van Winkle," "Robinson Crusoe," "The Exploits of Don Quixote," "Tom Brown's School Days," "A Christmas Carol;" and, for very small listeners, stories from Andersen and Grimm. At twenty-five cents the same firm have Church's "Story of the Iliad" and "Story of the Odyssey," and Stevenson's "Treasure Island," and for a little higher price one can

get Kingsley's "Water Babies," and Thackeray's "The Rose and the Ring." This last book is far too little known, and in the writer's experience, it, like the poet's Phyllis, "Never fails to please." The "Story of the Nürnberg Stove," by Ouida, is delightful, but avoid the same writer's "Dog of Flanders," sometimes recommended for children's reading, but heart-breakingly sad. "The Nürnberg Stove" may be had from the Charles E. Merrill Co., New York, for fifteen cents. Miss Martineau's charming * "Feats on the Fiords," telling of the life in work and play of Norwegian children, does not appear in any of the catalogues at hand, nor does "Boys of other Countries," Bayard Taylor's entertaining account of boys whom that famous traveller has known. Surely these are to be found in a cheap edition. An old favourite of the writer's, "Sea Kings and Naval Heroes," has long been lost sight of, read to pieces by admiring boys. Perhaps some friendly correspondent may be able to supply the publisher's name. E. R.

* "Feats on the Fiords," is published by Blackie & Sons, London, at one shilling.

Review's Question Box.

Where should the study of geometry begin in school? is a question that a correspondent asks of the REVIEW.

It begins in the kindergarten and primary grades where the cone, cylinder, cube and other geometric shapes are constantly handled by the pupil and used by the teacher in presenting ideas of form and outline. Thence onward through the grades the progressive teacher will present the subject more and more definitely by means of drawing, measurement and geometrical construction, aided by a suitable text-book and other resources at her command, until the high school is reached where the study of formal geometry may begin.

A. L. C.—We wish to get a picture of Lord Strathcona of suitable size for a school room, and write to ask if you can tell us where one may be procured.

You might try Notman & Son, Montreal, or W. & D. Downey, London, Eng., for the photograph. Do not know of any local dealers who have it. T. B. K.

Can the Ground-nut, (*Apios tuberosa*) be improved by cultivation? After trying it for some years, I did not think so; but for the last two or three years I find a marked improvement in the size of the flower clusters. I measured one this year which was over twelve inches from the base of the flower stalk to the tip, and estimated that it bore about a hundred and fifty flowers, while clusters of forty or fifty flowers were frequent. J. V.

In the October REVIEW a question was asked by a reader concerning the spider's webs which appear on the grass in late summer and autumn days. The following extracts from the London Spectator contain much that is explanatory of the work of these spiders and is beautifully descriptive of the Indian Summer season:

Of earthly things, the least earthly of all are the films and threads of gossamer which float in the still days of St. Luke's Summer (Indian Summer). Mediæval legend saw in them the remnants of the shroud in which the Virgin Mary ascended from earth to heaven, and later fancy the material from which fairies spun their garments, or which they used to harness to the cars their winged steeds of the insect world. . . .

The still autumn hours are often known as "gossamer weather." They are the days of perfect rest after the fulfilment of the year, the ripening of all its fruits, the maturity of all its young broods of birds and beasts and fishes. The halcyon days of spring were calm enough to have engendered the pretty story that the kingfisher's nest could float unbroken on the waters of the Grecian seas. But far greater in the real calm and tranquility of the clear and sunlit skies in which these almost imperceptible threads of insect silk and their tiny spinners can float upwards thousands of feet to the serene and cloudless levels of the autumn skies. . . .

What we *see* of the gossamer is so beautifully described by Gilbert White that if it were the only passage surviving among his writings, it would be evidence of his incomparable powers of sight and expression. It says almost the last word as to the appearance of the webs at this time of the year. He wrote of the close of the third week of September:

On September 21st, 1741, being then on a visit, and intent on field diversions, I rose before daybreak. When I came into the enclosures I found the stubbles and clover grounds matted all over with a thick coat of cobwebs, in the meshes of which a copious and heavy dew hung so plentifully that the whole face of the country seemed,

as it were, covered over with two or three setting nets, drawn the one over the other. When the dogs attempted to hunt, their eyes were so blinded and hoodwinked that they could not proceed, but were obliged to lie down and scrape the encumbrances from their face with their fore-feet, so that finding my sport interrupted, I returned home musing in my mind on the oddness of the occurrence. As the morning advanced, the sun became bright and warm, and the day turned out one of those most lovely ones which no season but the autumn produces; cloudless, calm, serene, and worthy of the south of *France* itself. About nine an appearance very unusual began to attract our attention, a shower of cobwebs, falling from the very elevated regions, and continuing, without any interruption, until the close of the day. These webs were not single filmy threads, floating in the air in all directions, but perfect flakes or rags; some were an inch broad, and five or six feet long, which fell with a degree of velocity which showed that they were considerably heavier than the atmosphere. On every side as the observer turned his eyes might he behold a continual succession of fresh flakes falling into his sight and twinkling like stars as they turned their sides to the sun.

White . . . dismisses the strange and superstitious notions formerly current about these webs, and says that there is no doubt that they are the real production of small spiders, which swarm in the fields in fine weather in autumn, and have a power of shooting out webs from their tails, so as to render themselves buoyant and lighter than air.

There is still much to be learnt about the aeronautics of these little spinners. . . . What has been added to general knowledge is a fact which accounts for the sudden, astonishing, incalculable numbers of the creatures that simultaneously ascend into enormous tracts of air on the fine days in autumn. "Ballooning" appears to be the regular amusement, not of one or two particular spiders called "gossamer spiders," but of the innumerable young of many kinds of web-making species. Most of our young spiders are hatched in the autumn, and though they vary much in fertility, some laying only fifty, and others as many as two thousand eggs, the average is high. As soon as the young spider is out of the egg it is able to spin, and it also has an innate knowledge of how to use the thread to the best advantage. Young spiders seem aware that while very small they can use floating threads as aerial sails far better than when they have grown older and heavier, and very sensibly they use this power, as it would seem, purely as a means of enjoyment. Older spiders will spin a long thread and keep lowering themselves from a beam or branch with the set purpose of being blown across a space they wish to cross, elongating the thread just as any one might lengthen the wire of a pendulum in order to increase the swing at the bottom. But the young spider throws out its threads and lets itself be carried away and upwards for the fun of the thing. It is certainly not in search of prey, for that would be found nearer the ground. They have been seen to stand on tiptoe, with upturned abdomen, and to go on spinning threads and allowing them to float on the wind till the sail so set carried them off on their aerial voyage, to sport in the currents and vapors of the upper regions of the sky. . . . Every one knows how readily air parts with its water in the condition of vapor, and deposits it upon spiders' webs in the form of drops of dew, upon the ground, and upon posts, trees, and palings. It seems natural that the webs of thread when floating in the air should also gain weight from condensing vapor, and so descend as Gilbert White saw them. The matting of the earth as the air cools towards sunset is often a wonderful sight. In the Thames Valley meadows the threads lie in such sheets that they sometimes reflect the rays of the setting sun as if from lakes of water. In these fallen threads it is difficult to find an insect entangled; yet the finest webs of the geometrical spiders which abound at the same season are often quite encumbered with the bodies of minute gnats and flies.

Dr. Andrew D. White lately delivered a lecture at Cornell University on the need of better education. We are glad to see that he advocated the study of the Bible in schools. He said: "No man's training can be finished without it. I would have readings in the schools from the sacred book —the story of Joseph and the sermon on the Mount and the wonderful writings of St. Paul. An educated man who has not those in his memory is to be pitied."—*Every Other Sunday.*

In the Trustees' section of the Kings County, N. B., Teachers' Institution a resolution was passed recommending to the Board of Education that a regulation be passed authorizing a Trustees' Meeting, composed of at least one trustee from each district in the inspectorate, at the same time and place as the County Institute. Notice was also given of a motion to provide for the appointment of a lady member on each board of school trustees.

November.

November woods are bare and still;
November days are clear and bright;
Each noon burns up the morning's chill;
The morning's snow is gone by night.
Each day my steps grow slow, grow light,
As through the woods I reverent creep,
Watching all things lie "down to sleep."

I never knew before what beds,
Fragrant to smell, and soft to touch,
The forest sifts and shapes and spreads;
I never knew before how much
Of human sound there is in such
Low tones as through the forest sweep,
When all wild things lie "down to sleep."

—*Helen Hunt Jackson.*

CURRENT EVENTS.

The Chinese minister to Germany is about to relinquish his post and return to Pekin to become the Minister of War. He will introduce universal military training, with the possible result of making the Chinese army equal in fighting strength to the combined armies of Europe.

Eighteen thousand houses in the slums of Liverpool have been torn down to make way for better buildings and more sanitary surroundings. There is a world wide movement for the improvement of cities; but perhaps Liverpool is doing more in this direction at present than any other city in the world.

While the mono-rail track is coming into use, it is expected that for high power and great speed tracks with three or four rails may yet be required. An English railway expert predicts that such tracks will be used, with electricity as the motive power, for the heavy trains which they will carry; and that a speed of a hundred and fifty miles an hour will be feasible within the next ten years.

Menelik, King of Abyssinia and Emperor of Ethiopia, died recently, and is succeeded by his grandson, Lidj Eyassu. The Empress Taitou, who has been the virtual ruler for some twenty years, if the reports of her great influence over the Emperor are trustworthy, will now be stripped of her power; for the supporters of the young Emperor are not friendly to her. Abyssinia is a Christian land, and has been so since the fourth century. It has an area of about two hundred thousand square miles, and a population of about eleven millions. It has railways, telegraphs, telephones and good roads in some places; and may be said to be the only really independent state in Africa, wholly free from outside interference.

The sudden revolution in Portugal seems to have been entirely successful, at least for the present. A republican government has been organized, with a well known scholar, Teofilo Braga, as president. That it will be a stable government is too much to expect, for it has not yet been accepted by all the people of Portugal; nor is it generally recognized by foreign governments, the government of the United States of America being among those that are cautiously delaying recognition. The exiled king will find a home in England.

It is remarkable that King Manuel sought safety not in the neighboring kingdom of Spain, but in Gibraltar, under the British flag; and quite as remarkable that the American Minister, when he had occasion to pass under the guns of the insurgents, chose as the safest means of conveyance a boat that carried the British ensign.

The Czar, as Grand Duke of Finland, has dissolved the Finnish Diet for refusing to consider certain bills sent to it by the Russian government. A new election will be held in January; but as the Diet was unanimous in refusing to act, regarding the method of presenting the bills as an infringement upon the rights of Finland, it is improbable that new representatives will be inclined to take a different course. It is a final struggle for the rights and privileges of the Finnish parliament, which is said to be the most democratic legislature in Europe. The Finnish and Swedish languages are both spoken in Finland, and the Finns fear that these will be suppressed if the Russians get full control, as the Polish language is now banished from the schools of that part of Poland which is under Russian rule.

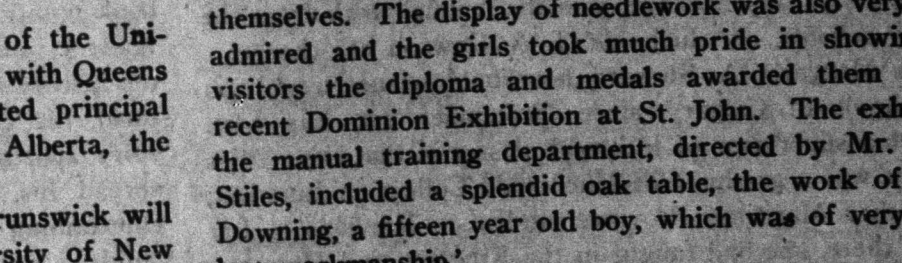
By a new German invention, unmanned boats, submarine vessels and steerable balloons are controlled and driven by electric waves without wires; and guns can be fired or machinery set in motion and stopped by the same means.

Some one has advanced the theory that the ancient Hebrews and others who wrote from right to left did so because as a people they were left-handed. This would be difficult to prove, and perhaps is not worth proving.

A herd of caribou nearly a mile wide, and stretching for several miles in length, has been seen in Alaska, according to late reports. It was thought to number a hundred thousand.

An Englishman, as shown by the patent office records, invented a flying machine forty-three years ago which closely resembles in plan those in successful use to-day. It did not succeed then because gasoline motors had not been invented, and no suitable motive power could be obtained.

An imperial senate was organized in China last month, as the first step towards the proposed general parliament of the Empire. The new senate is composed partly of nobles appointed by the government, and partly of representatives chosen by the provincial parliaments. There is a strong desire for the immediate convocation of the lower house, which, according to the plans of the government, is not to be fully organized until 1915.



The Edison storage battery, as applied to street cars in New York, has proved a great success. It may soon do away with the underground circuit and the overhead trolley wire, and will take the place of the gasoline motor for automobiles and motor boats, as being safer, cheaper, cleaner, easier to operate and noiseless.

Chulalongkorn, King of Siam, is dead, and his son reigns in his stead. The new sovereign is a prince well trained for his position in life, and was educated in England.

SCHOOL AND COLLEGE.

The number of scholars in residence at Oxford under the Cecil Rhodes Bequest in the course of the Academic year 1909-10 was 174, of whom 79 were from the Colonies of the Empire, 83 from the United States, and 12 from Germany.

Dr. S. W. Dyde, formerly on the faculty of the University of New Brunswick and lately connected with Queens University, Kingston, Ont., has been appointed principal of the Presbyterian College at Strathcona, Alberta, the appointment to go into effect next year.

The Rhodes scholar for 1911 from New Brunswick will be nominated by the Faculty of the University of New Brunswick on or before January 1st, 1911. Applications in writing which may be accompanied by letters and certificates will be received by the Chancellor of the University up to December 1st, 1910.

The school at Wine Harbour, Guysboro county, is in charge of Robt. A. Stewart, of North Lochaber. A correspondent of the Truro *News* says: 'This is the second term for Mr. Stewart in this section and we trust that he may be spared to remain with us as long as the old school house stands." One wishes that such a feeling might take a deep root in other communities.

Mr. S. Boyd Anderson, of Aberdeen school, Moncton, has arranged with the pupils of his department to receive their small savings, and when the amount to each one's credit is one dollar, to open individual accounts in one of the city banks. This plan should be encouraged in schools. The writer knows of many boys and girls who have such small accounts and take pride in managing them. There is no more practical way of teaching thrift, self-denial and business management.

Many schools might profitably follow the example of the Riverside, N. B., Consolidated school in having an Exhibition Day, when parents and other visitors are invited to inspect the work of the school. Exhibition Day at Riverside was a most interesting one, especially in manual training, domestic science and the products of the school garden. The Albert *Journal* says: "A notable exhibit was that made by pupils of the Domestic Science Department in the way of meals for one person—breakfast, dinner and tea—the three meals only costing twenty-nine cents. The food was very tastefully prepared and reflected much credit on the teacher, Miss Peacock, as well as on the pupils themselves. The display of needlework was also very much admired and the girls took much pride in showing the visitors the diploma and medals awarded them at the recent Dominion Exhibition at St. John. The exhibit of the manual training department, directed by Mr. A. R. Stiles, included a splendid oak table, the work of Percy Downing, a fifteen year old boy, which was of very excellent workmanship.'

Mr. J. David Collier, head of the Manual Training Department of the Macdonald Consolidated school, Prince Edward Island, has accepted a position on the staff of the Collingwood Technical School, Collingwood, Ontario. Mr. Collier has discharged the duties of his position in Prince Edward Island, to which he was recommended by Dr. James W. Robertson, nearly ten years ago, with ability and zeal, and he assumes his present charge with an increase of salary and a greatly enlarged outlook.

There are 220 students attending St. Francis Xavier College, Antigonish, N. S., the largest enrolment in the history of that institution.

The attendance at Acadia University is very large. The Freshman class alone has eighty students. Acadia Seminary has its accommodations put to the test to care for the large number of students flocking to its doors, and Horton Collegiate Academy has an enrolment of 123.

Rev. G. B. Cutten, D. D., was formally installed as president of Acadia University on the 20th October.

The school inspectors of New Brunswick who now receive $1,500 a year, paying their own travelling expenses, are asking for an increase of salary. The government seems inclined to grant their reasonable request.

The evening technical or continuation schools at Halifax, New Glasgow, Amherst and Sydney, have re-opened for the season with a large increase of students over last year. There are twenty-one secondary technical schools in Nova Scotia, all under the direction of the Technical College, Halifax.

Dr. W. W. Andrews, of Mount Allison University, has been called to Regina to assist in organizing the new Methodist College to be opened in that city. He will become its president at a salary of $4,000. It will be difficult for Mount Allison to secure a man of equal energy and ability.

At a recent meeting of the Maritime Technical Commission, the practical utility of the science course in the Maritime Colleges was called into question. In reply to this, Mr. H. E. Burchell, president of the Sydney Cement Company, said that he had employed three chemists, one from the foremost concrete laboratory in Germany, one from a scientific school, and one from Dalhousie. The latter was the most effective man of all. The chemist who is so highly spoken of, is Mr. G. M. J. MacKay, a graduate of Dalhousie with high honours in chemistry and chemical physics. Later he was nominated to the 1851 Exhibition Scholarship and studied at the Massachusetts Institute of Technology. Mr. MacKay is a son of Dr. A. H. MacKay, Superintendent of Education in Nova Scotia. His efficiency surely reflects great credit not only on himself, but on his *alma mater.—Dalhousie Gazette.*

One of the most interesting exhibits at the Sydney, N. S., Fair, says an exchange, was the manual work from the Sydney schools, of which Mr. J. A. Dawson has charge.

Miss Margaret A. Stewart, household science teacher in the schools of Calgary since September 1st, has been appointed supervisor of technical classes in that city. Miss Stewart was a graduate of Macdonald College in June last, with other Maritime Province students. Previous to her course there, she had taught in the Kingston and Hampton Consolidated schools, where she proved a very energetic and capable teacher.

A long and useful life has been completed by the death of Mr. A. McN. Patterson, at the age of 81 years. For half a century he had been principal of Acacia Villa School for boys at Hortonville, N. S., and his wise and capable administration of that well known institution won for it the confidence of parents. He is succeeded by his son, Mr. Arthur H. Patterson.

Miss Jane Brown, who has recently taught the school at Burtt's Corner, York county, retires from teaching this month. She is now in her 71st year and has given many years of faithful service in the schools of New Brunswick.

RECENT BOOKS.

The new *Public School Hygiene,* (cloth, pages 248, price 20 cents), which has recently been authorized for use in the schools of Ontario is a useful book, fully illustrated. The subjects are treated in a clear, common-sense way. The text is not burdened with details. The author, Dr. A. P. Knight, Professor of Physiology in Queens University, is fully alive to the importance of teaching children habits of cleanliness and the care of their health, thus laying the foundation of future successful work for them and the enjoyment of life. (The Copp Clark Company, Toronto.)

There is a demand for systematic instruction in good reading and speaking at school. To meet this need the *Essentials of Public Speaking,* (cloth, pages, 250, price, 90 cents), has been published by Messrs. Ginn & Co., the joint product of two authors of wide experience in teaching. They have discussed simply and to the point the elements of good delivery, with brief illustrations for applying principles. Then follow whole selections for practice, chosen from the best portions of English literature, embracing some passages already familiar to readers, but many of them not so well known. (Ginn & Company, Boston.)

Goethe's *Gotz von Berlichingen mit der eisernen* (iron) *Hand. Ein Schauspiel,* (cloth, pages xcvii + 225, price, 80 cents). This drama has an adequate introduction which describes Goethe's work and his preparation for writing the play; also the influence of Shakespeare and other dramatists upon its context and form. It is suitable reading for students who have had some years' experience in the language and who have a historical interest in German literature and in the life and works of Goethe. The notes are very full, and a bibliography adds to the value of the work. The printing is beautifuly clear. (Ginn & Company, Boston.)

The Ways of the Six-Footed, (cloth, pages 152, price, 40 cents), by Anna Botsford Comstock, and Weed's *Stories of Insect Life,* (first series, 25 cents; second series, 30 cents), published a few years ago, are excellent books in which to learn the ways of insect folk. Mrs. Comstock's book points out in a singularly fascinating style for young readers interesting passages from the lives of insects;—the history of a butterfly that found safety in a stolen uniform, the experiences of a bee that occupied a fourteen-story apartment house, the tale of a bold fisherman who spread his nets on the brinks of waterfalls, and other entertaining sketches that captivate the imagination of children and that lead them forth in the quest of these strange creatures so wonderful in their ways. Weed's Stories give the life histories, in simple language, of a number of insects most frequently met with thoughout the different seasons of the year. Winter is a good time to read these books and plan for active work next season. (Ginn & Company, Boston.)

From the simple home scenes of his beautiful native Thuringia, Baumbach has woven for us in prose and in verse many charming combination love and fairy stories, the best of which are included in *Marchen and Gedichte,* (cloth, 209 pages, price 45 cents). The author's easy style, careful selection and length of the stories will particularly appeal to younger students. (Ginn & Company, Boston.)

RECENT MAGAZINES.

In the Canadian Magazine for November, Mr. Newton McTavish gives an interesting account of the recent visit of 169 teachers of Manitoba to Great Britain.

The Century Magazine for November begins the forty-first year of its existence, and reviews the forty years of its history with a pardonable pride of accomplishment.

In Littell's Living Age for October 22nd, there is an interesting article from the Nineteenth Century and After on Canada Growing Up, which sums up well the progress and condition of this country.

The Chautauquan for October contains in its Reading Journey through Scotland, references to many historic places and picturesque scenes.

OFFICIAL NOTICES.

REGULATIONS APPROVED BY THE LOCAL COMMITTEE STRATHCONA TRUST FOR NEW BRUNSWICK RE DISTRIBUTION OF THREE HUNDRED AND FIFTY DOLLARS FOR PHYSICAL TRAINING PRIZES—1910-1911.

1. The present eight inspectoral divisions of the Province shall be the Provincial sub-divisions for supervision of the competition in physical training for the Strathcona Trust prizes.

2. The Three Hundred and Fifty Dollars for 1910-1911 shall be apportioned equally to each inspectorate; that is, Forty-three Dollars Seventy-five cents to each inspectorate.

3. The schools in each inspectorate shall be classified for purposes of competition as "Graded," "Semi-Rural" and "Rural."

Schools with more than three departments to be called "Graded;" with two or three departments, "Semi-Rural," and all other schools to be considered as "Rural."

4. A first and second prize consisting of Ten Dollars and approximately Four Dollars and Fifty-eight Cents respectively, shall be offered, for competition within each of the three above mentioned classes of schools.

5. The Inspector of schools shall award the prizes within his own inspectoral division.

6. The total amount of each prize shall be paid to the teacher, who shall apply *one-third of it*, with the approval of the Inspector and Trustees, to some appropriate object to be permanently displayed in or about the school room as a memento.

7. The Inspector shall allot marks when inspecting physical training on the following plan:

20 per cent. to be allotted for discipline, orderliness and cleanliness. The discipline and orderliness to be judged during the ordinary school work, as well as during the physical exercises.

35 per cent. for the performance of physical exercises of prescribed text book.

45 per cent. for general physique and health of the school. The manner in which the children sit at the desks and carry themselves when walking or standing still should be carefully noted, an erect carriage being of prime importance.

(Signed W. S. CARTER,
Chief Supt. of Education.

Fredericton,
October 27th, 1910.

N. B. School Calendar, 1910-11

Dec. 20	Examinations for Teachers' License (Class III).
Dec. 23	Schools close for Christmas vacation.
Jan. 9	Schools open after Christmas vacation.
April 13	Schools close for Easter vacation
Apl. 19	Schools open after Easter vacation.
May 18	Loyalist Day (holiday in St. John City.)
May 24	Victoria Day.
May 25	Examinations for Teachers' License (French Dept.)
May 31	Last day on which Inspectors are authorized to receive applications for Departmental Examinations.
June 9	Normal School Closing.
June 13	Final Examinations for License begin.
June 30	Schools close for the year.