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MISSING

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CONTENTS:

Editorial Notes.....	81
Botany.....	82-83
Nature Study of Animals.....	83-84
Centennial Anniversaries of War of 1812.....	85-87
When to Cry.....	87
Notes on High School Literature.....	87-88
Arithmetic on the Blackboard.....	88-89
Teachers' Institutes.....	89-90
P. E. I. Summer School for Teachers.....	90
For the Primary Department.....	91
Seat Work with Letters.....	92
A Spelling Game.....	92
First Prize Letter Summer School of Science.....	92-93
Trafalgar Day, October 21st.....	93
For Friday Afternoons.....	94
Mistakes in Discipline.....	95
The Father of all Hot Springs.....	95
Useful Books.....	96
Nelson's Hand at Teneriffe.....	97
Current Events.....	97-98
School and College.....	98
Recent Books.....	99
New Advertisements:—	
L'Academie de Brisay, p. 78; The St. John Business College, S. Kerr, p. 100.	

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We thank all those subscribers who have so kindly sent us the August numbers of the REVIEW that we asked for last month.

The index to Volume XXVI which, through a misunderstanding, was not published, as is usual, with the June number, is sent out with this issue.

The attention of teachers of Nature Study and Agriculture is directed to our report on another page of Director Steeves' address to the teachers of Westmorland County, and especially to his warning that the work for School Gardens must

be begun in the autumn. The Bulletin of instructions may be obtained from Mr. Steeves at Sussex.

Owing to an unfortunate misprint, the article in our August issue entitled "An Ideal Teacher" was not correctly credited. This testimony to the late Dr. Hay was written by Miss Susan E. Cameron, a graduate of the St. John High School, now Vice-Warden of the Royal Victoria College, Montreal.

In our zeal for utilitarian education, are we in danger of neglecting the training for enjoyment of beauty in Nature and in Art? Dr. Parkin is warning us not to let our young people fix their hopes and ambitions solely on material prosperity. Mr. Vroom pleads for the study of field botany, that we may learn to see the loveliness of the plant in its own surroundings, and he shows us how the study of ferns may train our eyes to recognize the beauty of form. Is not that teaching "practical" which will add to the pleasure of our daily lives?

There is no time in the year when the beauty of our country makes a more startling appeal than in late September and early October. Look where we will, we see a glory of colour in marsh and wood, over hillside and plain. Blue sky, brown streams breaking into foam against gray rocks, maples glowing among the firs, masses of golden brown brakes, birches like splashes of sunlight in the dimness of the evergreens, stretches of swamps all a warm red broken by pools of still, dark water—these and countless other beauties call to us to rejoice in the splendour of the passing year. "It is a fine thing to have a fair land, even though it be a poor one" said Nansen, as he sailed along the coast of Norway on his way to the far North. And we Canadians, while giving thanks on the national Thanksgiving Day for the wealth, peace and prosperity of our country, may lift up our hearts in the words of the Psalmist and say "The lot is fallen unto me in a fair ground; yea, I have an heritage of beauty."*

*Ps. xvi, 6; Jeremiah, iii, 19, margin.

BOTANY

L. A. DEWOLFE.

Too often, a weed is a weed and nothing more. But weeds represent as many botanical families as do cultivated plants.

I shall begin with the Pink family, not only because it furnishes many of our worst weeds but also because the flower structure is so simple. Botanists place this family low among the dicotyledons. The symmetrical flowers show lack of complexity. The small, undivided, or entire leaves indicate the same.

The family is not difficult to identify. Examination of such a plant as a chickweed or a catchfly would help more than any written description. Five petals notched at the apex would put one on the track at once. Even where the petals are not notched, if one finds a plant having the calyx free from the ovary, five distinct petals, not more than ten stamens, attached to the receptacle, and two to five stigmas, it would be wise to turn to this family in your botanical Key. There, one will find details sufficient to remove all doubt.

Common representatives of the Pink family are corn cockle, bladder campion; two or three species of Catchfly; several species of chickweed, mouse-ear chickweed, and stitchwort; sandwort, sand-spurrey and corn-spurrey. Among garden representatives are Sweet William, Catchfly, Bouncing Bet, Pinks and Carnations.

A capital exercise for children would be the collecting of the various species of each genus. Three or four children could be assigned the task of getting a complete collection of this family while other children collect another family. Notes on the habit and habitat of every plant collected will furnish excellent topics for descriptive composition. The fact too, that most of the plants we talk about came from Europe will give one point of contact between botany and geography. Some of them were brought here as garden flowers; some because the first settlers believed they needed medicine, and that many plants had medicinal value; but most of them came as stow-a-ways, hidden among seed grain and flower-seeds. In the same way, plants are still being scattered in all parts of the world. In our own provinces, new weeds appear every year. This is because we import seeds instead of growing them. Many too, are scattered along the railway from hay used to feed live stock on the way from Ontario. What other ways can the pupils think of?

Another common family is the *Ranunculaceae* [Look up the derivation of that big word. This family shows some advance over the Pinks in the evolutionary development of the plant kingdom. Though in general the structure is simple, this is a family of experimenters. Genera, and even species differ so much that one would scarcely believe all could belong to one family. Who would think, for example, that a buttercup, a columbine, and a larkspur should be grouped?

The attempts to enlist the services of insects have led to most of these changes. After all, the differences are largely in appearance rather than in arrangement of parts.

A typical representative of this family is the buttercup. Notice that the numerous stamens and carpels are separate from each other and from other parts of the flowers. This is distinctive. The reader will remember that in *Rosaceae* the petals and stamens were attached to the calyx. Not so, however, in *Ranunculaceae*.

In many genera of this family, the sepals are colored and showy, resembling petals. They really do the work of petals. The latter, in such case, are modified into nectar-bearing bodies; or they may be entirely lacking.

The Goldthread, Monk's-hood and Larkspur are good illustrations of showy sepals and inconspicuous petals. In the Meadow-rue, there are no petals. Here, even the sepals are short lived. This plant is worth careful study for more reasons than one. Examine a dozen different specimens. Are all alike?

The common wild species of *Ranunculaceae* will include clematis, goldthread, meadow-rue, hepatica, anemone, baneberry, marsh-marigold, and eight or ten species of crowfoot and buttercup. Among the cultivated members of the family are Columbine, Clematis, Larkspur, Monk's-hood and Peony. Hellebore, so commonly used to poison insect pests, belongs here.

A third family, available at all times, is *Cruciferae*. It is easily identified by the four petals whose upper half spreads to form a cross. To make identification certain, however, look at the six stamens, and notice that two are shorter than the other four. This arrangement was doubtless an experiment on the part of Nature for better pollination.

Determination of species is easier in late summer; for the differences in pods and seeds are used more than any other characteristic.

Here belong some of our worst weeds as well as some of our most common vegetables and flowers. Among the former are two or three species of pepper grass, two or three mustards, the worm-seed mustard, wild radish, and shepherd's purse. Wild species which are not weeds are toothwort, sea rocket and two or three species of Cress.

Cruciferous vegetables are radish, mustard, turnip, cabbage, cauliflower, Kohl-rabi, and horse-radish. Well known flowers are Stocks, Arabis, Sweet Alyssum, Candy-tuft and Wall flower.

May I urge young teachers who may not know all our common flowers and weeds, to save these lists until next summer? Everything I name is easily found. Learn the family characteristics and, as the season advances, try to make complete family collections. During the winter, read seed catalogues; and order seeds of each cultivated plant I mention. If you have no school garden, grow them at your home or your boarding place. Encourage your pupils to grow them at home. The result will repay the effort many times over.

NATURE STUDY OF ANIMALS.

Suggested studies for the last part of October and the first part of November.

H. G. PERRY.

For general work throughout the grades, use the fish, rabbit and squirrel. For the lower grade each subject (animal) should suggest topics for two or three fifteen-minute lessons; these should be followed by a comparison of the different forms.

In taking up the work on the fish, you should, if possible, provide a small live fish or two in an aquarium, and also several dead specimens of the same species. In providing aquaria no extra expense need be incurred, as large glass fruit jars, candy jars, or other glass vessels serve the purpose very well. If you plan to keep the fish several days, you will have to either change the water several times daily, or, better still, provide your aquarium with a growing water-plant. For this purpose use plants found growing under the water.

In setting up your aquarium, first of all cover the bottom, an inch or two deep, with small stones taken carefully from a pond. Next take some mud and leaves from the bottom of the pond, being careful to disturb them as little as possible, and place upon the stones. Next plant the water-plants mentioned above, among the stones, and then very gently

pour the water down one side of the vessel or along a slanting board, filling to the depth you desire. Place in a cool part of the room where the sun will not shine directly upon it for any length of time, as most fish, tadpoles, etc., cannot live long in warm water. After the mud has settled, and the water has become perfectly clear, put your live specimen in this "pond." You may find it of advantage to tie mosquito-bar over the dish, to keep the fish from jumping out; under certain conditions I have known fish to jump as high as six inches over the sides of a similar prison.

This interesting work may be much extended, and other forms kept in aquaria for observation, and study. Snails, water beetles, fresh-water clams, etc., readily lend themselves to such treatment. In the aquarium for the clam, place in the bottom only clear sand, about two inches deep. Direct the higher grades in this work.

The breathing, swimming, floating, sinking, etc., of your fish, will be of great interest, and provide for your higher grades valuable topics, as the illustrate the application of chemistry and physics to the functions in animal life.

Note and sketch the outline of the body as seen from above, and from the sides. Observe the body covering, the scales, and make a diagram of their arrangement. Study a scale from a dead specimen, sketching and note its texture. How does this covering compare with that of the snake, toad, bird and horse?

Examine closely the sides of the fish for linear markings, and lead your pupils to discover themselves the lateral line, extending from head to tail. Examine scales from this region. Are they exactly like the others. This lateral line is a zone of sense-cells of rather doubtful function. On page 306, "General Zoology," Linville and Kelly, in an account of the fish, we find this reference:—"Along a clearly defined lateral line, the scales are somewhat modified, and beneath them are sense organs, the functions of which have been variously stated. Professor G. H. Parker considers these organs are sensitive to mechanical jars of a low rate of frequency, thus standing between the organs of touch proper and those of hearing."

Call attention to the appendage, the fins, both the medial and the paired. Diagram the fish on the black-board, marking in and naming these as well as other parts, such as the mouth, nose, eye, ear region, and the gill-covers and gills.

From the movements of your aquarium specimen learn something of the fins in swimming. Which supplies the motor power?

Determine the use of each, the back or dorsal, the tail or caudal, the ventral or anal, and the two sets of paired fins; those next the head are the pectoral fins, the others, the pelvic fins. Some fish have more than one dorsal fin, in which case the one next the head is called the anterior dorsal. For fin modification examine the dorsal fins of the perch of our rivers and lakes, and the little stickle-backs from along our coasts. The sturgeon, dog-fish, shark, etc., show a different shaped caudal fin. Examine pictures of these and other fish.

Note the position and shape of the eyes. Are they provided with movable eyelids? Why not? Just back of the eye is the ear-region. Is it indicated in the surface? Read up in some good text-book on zoology an account of the ear of the fish, and its functions. Examine the mouth for teeth, they are readily detected in some species. Note the tongue, and looking farther back, the gill arches. Note their extent and attachment above and below. How many arches are there? Lift the gill-cover and examine the arches from the outside. What is the color of the arch, what, of the attached fringe-like part? What gives it its red color? What is the function of the gills? How is the same function performed for higher vertebrates, as dog, horse, bird and man? From what do fishes get their oxygen? How do land animals get their supply? How is the oxygen held in the water? Does this suggest an explanation why you must either change the water several times daily or else provide your aquarium with a growing water-plant? Give the explanation in each case. These and similar topics provide valuable exercises for the more advanced grades.

For the lower grades correlate this work with the geography of the country, by making lists of your more common fish, and the coast waters (if any), lakes and rivers where they are found.

The intermediate and advanced grades may, in a similar way, extend their studies to the Provincial and Dominion fisheries. Maps should be drawn showing the location of our coast, river, and lake fisheries, and the grades directed to the periodic movements of fish along our coast, and in inland waters. They should learn something of the laws regulating the fishing industry, especially those

enactments mentioning fish found in their locality, and the reasons for closed seasons, etc., and so come to have a wholesome respect and a due appreciation for law and rules.

Something should be attempted in the higher grades respecting the value of our fisheries. The Canadian Year Book contains valuable information along this line, and the Dominion Fisheries Report will tell of the work of the Government for their preservation and extension. Encourage the use of such literature.

It is impossible in our short space to outline a similar detailed study for the squirrel and the rabbit, but the teacher should adjust and arrange similar topics for each of these animals.

A caged squirrel presents some advantages for initial work, especially for the younger pupils of the lower grades. Be content to give these little people a few facts. Its shape, color, (above and below) size, body covering, the position of its body and tail while eating, how it holds its food; how it escapes from its enemies, how it runs and climbs, and jumps from tree to tree; its food, its industry etc., are topics of interest; Extend these for intermediate and higher grades, *e. g.*, under shape and coloring, you should lead your classes to appreciate how well the long slender body is adapted to the active climbing life it lives, and note its "protective coloration." Does this aid it in escaping from its enemies?

The Chipmunk, a cousin of the Red Squirrel, should, if time permits, be considered with it. Its smaller size, striped coat, and modest habits, are distinguishing points. It hibernates during the winter, living on the food, mostly grain and nuts, stored during the fall. Does the Red Squirrel store food too? Does he hibernate?

What is the food of the rabbit? How does he prepare for winter? Name some of his enemies, and point out some protection he enjoys. Tell something about the pest these animals are in Australia, and explain why they cause no serious trouble in this country. Lead your pupils to see that Nature imposes heavy fines upon man for disturbing her balance. As example, instance the pest of the English Sparrow, and of the Brown-tail and Gipsy Moths.

The intermediate grades may also take lessons on the preparation, in general, of animals for winter, the insects, the bear, the weasel, the wild-goose, etc.,

The intermediate and higher grades may combine some work in our domestic animals, as the cow, and sheep.

Show that there are two chief uses for Cattle — the production of beef and the production of milk — and that the various breeds found in your section fall naturally under these two classes.

The chief beef breeds are Short-horn or Durham, the Galloway, the Hereford, and the Aberdeen-Angus; the dairy breeds, the Jersey, the Guernsey, the Ayrshire, and the Holstein.

Note the original use of the horns, how under directive breeding they have tended to diminish, till to-day we find short-horned and hornless breeds.

Diagram a cow on the board, and name its chief external parts. Compare the parts structurally with those of the dog, and hen.

Examine the teeth of the cow, and compare the teeth of the dog or cat. The sharp front teeth for biting are called incisors; the back teeth are broad and formed for grinding and are known as molars; while between these molars and incisors are long and rather sharp teeth, called the canines.

In the cow the number of upper and lower molars on each side is six. This is represented by the formula;—

Molars $\frac{6}{6} - \frac{6}{6}$, Fill out similar formulae for the incisors and canines.

Which are absent from the upper, and which from the lower jaw? Make similar formulae for other domestic animals.

Observe the horse and the cow in the pasture. Which can crop the shorter grass, and why?

Diagram a side of beef on the board. Drill your scholars in its general shape, and especially in the cuts it contains. Which cuts yield the finer and which the coarser meats? What is the price of each per pound? Is there more food value in a pound of the high priced Sirloin or Porterhouse steak than there is in the comparatively cheap flank? If not, then why do we pay the higher price? Teach your pupils that by exercising a little care in cooking, these cheaper meats can be made quite as savory as the higher priced cut. This will tend to keep down the meat bill, it is good economics, and first rate economic nature-study.

Throughout this article, "lower or primary grades" is meant to cover grades I, II, III; "intermediate grades," IV and V of our country school; and "advanced grades" all grades above those.

CENTENNIAL ANNIVERSARIES OF THE WAR OF 1912.

J. VROOM.

XVI.—The Battles of Chateauguay and Chrystler's Farm.

October 26.—The Battle of Chateauguay, in which a few French Canadians turned back an invading force of ten times their strength, may well be regarded as one of the turning points of Canadian history. It saved Montreal from attack and probable capture, for the city was then as defenceless as it is to-day; and it proved to friend and enemy that the French Canadians were loyal British subjects, ready to fight for their allegiance, and as brave as they were true.

The famous battle was but a skirmish, so far as numbers are concerned, and is generally not even mentioned in United States histories; but in its heroic action and in its results it was a great and decisive victory, to which Canadians may still look back with pride. Its hundredth anniversary will be celebrated on the old battlefield and elsewhere; and those who cannot join in the celebration may at least recall the story.

The army of the north, the largest of the three armies that threatened our southern frontier, had remained comparatively inactive during the summer of 1813. Early in September it began to move for a concerted attack upon Montreal.

It was in two divisions; one at Sackett's Harbor, under General Wilkinson, who had succeeded General Dearborn in chief command; the other at Lake Champlain, under General Wade Hampton. Wilkinson was to follow the St. Lawrence to a point just above Montreal, where, according to his plans, Hampton was to meet him, reaching the place by the best route he could find.

As the stars in their courses fought against a warrior of old, so the weather seems to have fought against the invaders. Hampton chose the most direct route towards Montreal, and advanced along the Richelieu River; but he was soon compelled to retreat because of the want of water, owing to an exceptional drought. Returning to Lake Champlain, he then moved to the westward; and by the middle of October he was encamped with his army a few miles south of the boundary line in the upper waters of the Chateauguay, a tributary that enters the St. Lawrence near the appointed place of meeting. Here he remained for some time, waiting for Wilkinson's movements, which were delayed

by storms, and leaving the Canadians uncertain as to which route he might take. On the twenty-first of October he again crossed the boundary, coming down the valley of the Chateauguay; and on the following day he encamped on Canadian soil to gather his forces, having learned that the Canadian leader, de Salaberry, was waiting to give him battle.

Major de Salaberry had chosen a position on the northern bank of the Chateauguay, about twenty miles from its mouth. Wooded hills and ravines made the place easy to defend. He had with him some three hundred men, besides the Indians who were scattered through the woods to the number of nearly two hundred. In addition to these, six hundred men, chiefly French Canadians under command of Colonel Macdonell, the hero of Ogdensburg, arrived the day before the battle, and were placed a little farther down the river to form a reserve. Hampton, according to the lowest estimate, had from four to five thousand men. The number actually engaged in the fight is given as three hundred and fifty on the Canadian side and three thousand five hundred of the enemy.

On the evening of the twenty-fifth, Hampton sent out a strong detachment under Colonel Purdy, who was to keep to the south of the river until he reached a ford just below de Salaberry's line of defence, and there to cross at dawn and attack the British from the rear. As soon as his firing was heard, a stronger force, under General Izard, was to attack the front. Hampton remained himself with his reserves.

Purdy's guides, perhaps intentionally, led him astray; and his men got lost in the woods, where they passed a miserable night in the rain. It was after mid-day on the twenty-sixth when they got to the ford. Izard had advanced slowly, waiting for the signal.

About two o'clock the battle began. The guard at the ford was driven back; the British pickets on the north side of the river, as had been arranged, retired behind a barricade which had been thrown across the road; and Izard's men pressed forward, thinking this the beginning of a general retreat. But de Salaberry held his ground, and ordered the boy bugler at his side to sound a call. Macdonell answered with a bugle call, and came forward with his men to hold the ford. Some accounts say that other bugles were heard from different directions, all sounding the advance. These and the war

cries of the Indians alarmed the invaders, and caused them to fall back in confusion. Those on the south side of the river again got lost in the woods, where they mistook each other for enemies, and were completely disorganized. Hampton recalled the others and made no further effort to advance. Two days later he began his retreat, and by the first of November he had reached his old place of encampment south of the boundary line.

The sequel to this story is that of the battle of Chrystler's Farm.

November 11.—Chrystler's, (now spelled Chrysler's or Crysler's), is on the Canadian bank of the St. Lawrence near the head of the Long Sault rapids, and not far from the point where the river becomes the international boundary. At the latter point, on the southern side, is the village of St. Regis, the lowest point on the river that is not in Canadian territory.

Hampton, having reported his reverse at Chateauguay, received a despatch from Wilkinson on the seventh of November appointing St. Regis as their place of meeting. He refused to comply with this arrangement, and continued his retreat to Plattsburg, giving as his reasons a lack of provisions and the unfitness of his troops for active service.

Meanwhile Wilkinson, still vexed by winds and storms, had not started on his way down the St. Lawrence until the fifth of November. He passed Prescott on the night of the sixth, and on the ninth he had reached the head of the rapids. There was unavoidable delay in passing the rapids; and his rear guard was overtaken on the morning of the eleventh by a British force that had followed, consisting of about eight hundred regulars and militia under Colonel Morrison.

Wilkinson had an army of seven thousand men, many of them yet at the head of the rapids and on the Canadian shore. He sent one thousand eight hundred of them to drive back Morrison's force; and later added six hundred, so that they outnumbered the British three to one. The fight took place in Chrystler's field. It was a sanguinary engagement, in which one-fifth of the British were killed. The invaders lost more men. The capture of one of their guns decided the day, and they retired or were driven from the field. Later they were compelled to take to their boats and cross to their own side of the river. The victors won glory,

but no great advantage; for Wilkinson kept on his way with the loss of but three hundred men. When he reached St. Regis, however, and found that Hampton was not there to meet him, he abandoned the campaign against Montreal and went into winter quarters.

A monument marks the site of the victory at Chrystler's Farm. For the victory at Chateauguay, de Salaberry received the honor of knighthood. It is not for us to say that the invaders failed on both occasions because of the inefficiency of their leaders. We may rather say that they might have succeeded by numbers alone, but for the valour of the defenders; who, in saving the chief city from attack, repelled the most formidable invasion of the war, and perhaps saved Canada.

WHEN TO CRY.

There are millions of children in the world who want to do just the right thing and the very best thing, but they do not always know what just the right thing is, and sometimes they cannot tell the very best thing from the very worst thing.

Now I have often thought that there are children who cry, now and then, at the wrong time, and I have asked many of the older people, but none of them could tell me the best time to cry.

But the other day I met a man older and wiser than any of the rest. He was very old and very wise and he told me.

"It is bad luck to cry on Monday.

"To cry on Tuesday makes the eyes red.

"Crying on Wednesday is bad for children's heads and for the heads of older people.

"It is said that if a child begins to cry on Thursday he will find it hard to stop.

"It is not best for children to cry on Friday. It makes them unhappy.

"Never cry on Saturday. It is too busy a day.

"Tears shed on the Sabbath are salt and bitter.

"Children should on no account cry at night. The nights are for sleep.

"They may cry whenever else they please, but not at any of these times, unless it is for something serious."

I wrote down the rules just as the old man gave them to me. Of course they will be of no use to the older boys and girls. The wise man meant them for the little ones—the millions of little children who want to do the right thing and the very best thing.—St. Nicholas.

NOTES ON HIGH SCHOOL LITERATURE.

Tom Brown's School Days at Rugby.

In the REVIEW for October, 1911, rather full notes were given on "Tom Brown," and teachers are referred to these for the writer's idea of how the book may be studied. Additional notes on this book have however, been particularly asked for, so we shall take them up this month and leave further discussion of Cowper until November. While reading "Tom Brown," students might also, for variety, be learning by heart some of the selections from Cowper that were suggested in September. Or they might memorize Matthew Arnold's "Rugby Chapel," or portions of it.

Hughes avows, in his preface, that his whole object in writing "Tom Brown," was to get the chance of preaching. However that may be, it is not now read as a sermon, but as a story, and an excellent story. So we may safely cut out the bits of direct preaching that interrupt the narrative. They are of interest and value to the maturer reader who wants to know Hughes' opinions of the evils and difficulties of his own time, and how he thought they could be mended; but to the boy or girl who is just beginning the study of literature, they are, as I said, an interruption, and may be a hindrance.

I should be guided altogether by the ability of the class in dealing with Chapters I and II. If they read fluently, and have some taste for good English, I should certainly read all of the first chapter for the sake of the racy and intimate descriptions of the writer's own country; and I should press home the passage beginning "All I say is, you don't know your own lanes and woods and fields."

But with a slow class, I should get to the story as quickly as possible. It is plain that in these opening chapters Hughes was dwelling on the scenes, people and customs of the White Horse Vale quite as much for the pleasure of expressing his own love of his home surroundings, as to bring out any points about his hero. So be satisfied if the place and time are gathered from chapter I.

"In those days," "twenty years ago" when was that? In what year did Hughes write the story? Notice and collect all the references to the time of the action. Hunt out the places—the country of Berks at least, on a map of England.

Leave out the following passages. In chapter II, from "That's a fair true sketch" to the end. In

chapter III, "Now the theory" to "when they are at play and rest." The rest of the "preaching" is, I think too closely woven into the story to be left out. Moreover, most of it is addressed to boys, and not to reformers or teachers. But, I would not dwell upon it.

Of course the pupils must understand clearly the difference between the terms "Public School," as used in this country, and in England. It is explained in the note, page 271.

The first three chapters are an introduction. The real story begins with chapter IV, where there is a distinct change from descriptive style to that of narration, a settling down, as it were, after an easy stroll, to a steady trot. And the last chapter is a prologue.

The story shows us a boy's life at a real and famous school, and gives us a portrait of a real and famous headmaster. The story is excellently constructed, and the characterization well done. A study of the book as a whole is given in our former notes. The following points may be taken up for home work and for oral composition.

Study the quotations at the head of the chapter. Find out where each writer lived and what was his chief work. Explain how each heading bears upon the chapter.

Give the gist of Mr. Brown's advice to Tom the night before he went to Rugby. What did the Squire want Tom to turn out to be? Compare Tom's own answer to Arthur's question "What do you want to do here?"

What fault had old Brooke to find with the Schoolhouse? Tell how his fears were justified. What did he say about the Doctor?

How did Tom pass his first Sunday at School? Describe the game of hare-and hounds.

What work did the lower fourth have to do? Compare it with work done today by Canadian boys of the same age.

Tell about Tom's personal knowledge of the Doctor, beginning with his first sight of him.

Why is the story divided into two parts? What does each part show?

Make two lists of the characters, dividing them into "Major" characters, essential to the story, and "Minor" characters. In which list do you put (a) Mrs. Arthur? (b) Diggs? (c) Martin?

Describe the three different methods of study followed by Tom, Martin and Arthur.

What was the guard's description of Rugby? What is Hughes' advice about fighting? Why did Tom think that East would make a good officer?

Describe the ceremony of "calling over." What songs did the boys sing? How many of them have you ever heard?

Explain the following, and use them in sentences.—
cicerone, homely, (in the sense used, page 165), praepostor, spinney, itinerant, opodeldoc, Balliol, Medes and Persians, redoubtable, Argus, Ishmaelite, elegiac, vicarious, depredators, preposterous, refute, malice prepense, a leg-bye, nem. con. carte blanche, toco, delinquent, dramatis personae.

ARITHMETIC ON THE BLACK-BOARD.

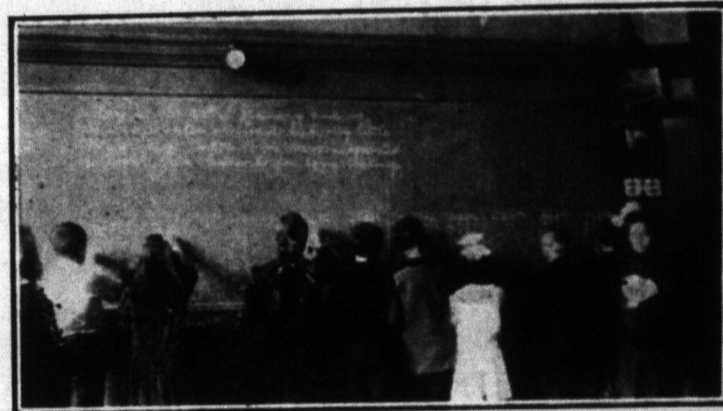
For Senior First Book Children.

J. M. NIVEN.

To train the children to make their figures large, and to make them well, I arrange on the blackboard a series of examples. One day it may be Addition, another day it may be multiplying consecutively by 2, or it may be a lesson in subtraction. As many children as can be accommodated at the black-board are sent up, and given a piece of chalk. At a given signal they start working. I only allow a certain amount of time, and if the figures are not well made no credit is given.

As soon as a child is finished he puts his initials at the bottom of his example, and steps forward in line as the two in the picture have done.

As I repeat the examples after having put down three or four, it is not much work for me to know



who have correct answers, and the children cannot possibly copy.

At first the figures used to be made very small and indistinct, to say nothing of being on the slant, but with this practice there has been very great improvement.

While the children are busy at the board, the remainder of the class are going on with their regular work.

I mark on the black-board the number whose examples were correct. On another line I mark the number whose figures were well made, even if a mistake has been made in the work.

These children then take their seats and another row replaces them at the front, and so on until every child has had an opportunity to work.

The children benefit in many ways from a lesson such as this. They gain in self-confidence, for some who are too diffident to go up to the black-board and work an example by themselves, do not mind at all, when they have company.

They gain also in control of their movements, as they pass to and from the black-board in as quiet a manner as possible.

It is also excellent eye-training, for when all the children have completed their work, a minute is allowed in order to select the one whose figures are the plainest. Thus they can compare their own work with the one chosen and be stimulated for future work.

TEACHERS' INSTITUTES.

One hundred and eighty teachers of York, Sunbury and Queens Counties met in a United Institute at Fredericton, September 18th and 19th. At the opening session Alderman Farrell welcomed the teachers on behalf of the city. The President, Inspector Hanson, in an excellent speech, urged the members of the Institute especially the younger teachers, to take part in the discussions. This appeal was seconded by the Chief Superintendent of Education in his address. Dr. Carter addressed himself particularly to the teachers of country schools and drew attention to their great opportunities. Among the improvements which he hoped would be introduced before long, he mentioned:—School gardens with every country school; general household science teaching for girls; elementary handwork in the lower grades, essential as a foundation for technical training; and a Summer School in New Brunswick, where special attention might be given to domestic science and school gardening.

At the second session, Mr. J. B. Daggett gave a very optimistic and interesting address on "Agriculture in the Schools," dwelling upon the great importance of agriculture as the basis of all industrial prosperity. He was followed by the Chief Superintendent, who quoted some facts to show the interest taken in Agricultural Education by the business men of the United States. A discussion on school gardens was ended by a short account by Miss Hester Sleep of the garden at her school at Dunn's Corner.

A short and very practical address was given by Mr. H. H. Hagerman of the Normal School, on School Hygiene. Mr. Hagerman insisted on more careful cleaning of schoolrooms and gave directions for sweeping and dusting rooms in a hygienic way.

On Friday morning, Arithmetic was the subject of interest. Dr. B. C. Foster gave a clear and interesting talk on the Teaching of the G. C. M. by long division. Much discussion followed, chiefly on the question whether it was best to teach the underlying principles when G. C. M. was introduced in Arithmetic, or to defer that until it came up in Algebra in a higher grade. Some teachers contended that the course in Arithmetic was so full that methods only, and not principles could be taught. Chancellor Jones of

the University of New Brunswick asked the pertinent question, "Are we doing too much to save the child from thinking?" Miss A. M. Harvey gave a lesson on a useful device in teaching long division.

In the afternoon the teachers listened to an excellent address on Physical Training by A. S. Macfarlane, M. A. Mr. Macfarlane's explicit directions were very valuable, and we hope to reproduce some of them at another time. They all tended to illustrate and emphasize his main contention, that physical training should be educative, and that the teacher, in order to produce the desired effect, must know the object of each lesson, and the correct progression from easier to harder.

Professor Miller, of the University of New Brunswick, in a paper on Forestry, showed how this subject could be incidentally taught along with other studies, especially with geography, nature study and history.

Dr. Keirstead of the University briefly addressed the teachers, telling them that nothing in pedagogy could take the place of a sympathetic relation with the child.

A very interesting half hour was spent in discussing "Teachers' Problems" drawn from the question box.

Resolutions were passed expressing regret at the loss of Dr. John Brittain, Dr. G. U. Hay, and Mr. J. F. Alexander. It was moved that the York County Institute meet every year instead of every two years, and after the passing of this motion the meeting adjourned.

The officers elected for the ensuing year are: President, Mr. Frederick T. Manning; Vice-President, Miss Lulu Hallett; Secretary-Treasurer, Miss Ella L. Thorne. Additional members of Executive:—Miss Ethel Boyd, J. A. Hughes, Miss Jessie McKnight.

The meeting of the Westmorland County Teachers' Institute was held at Shediac, September 25 and 26, when about 115 teachers enrolled. The President, Mr. H. B. Steeves, took the chair. The first address was given by Mr. James A. Starrak, on Manual Training as adapted to the Country School. Mr. A. D. Jonah of Sackville then read a paper on What may be expected of Schools in Agricultural Training. Mr. Jonah gave some examples of simple and practical experiments that could be made in the school-room. After refreshments, served by the ladies of Shediac, had been enjoyed, the meeting adjourned until the evening, when a public meeting was held in the Assembly Hall of the High School. After the address of welcome, a musical programme was carried out, and addresses were made by R. P. Steeves, Director of Elementary Education, and others.

On Friday morning, the session was opened by the reading of an instructive and delightful paper by Miss Mabel Dixon of Sackville, on How to

Secure Expression in Reading. This paper was so highly appreciated that an encore was called for, and Miss Dixon responded by giving an amusing recitation.

Director R. P. Steeves then gave an important address on Nature Study and School Gardening. A part of his advice may be summarized as follows: Do not think that you must know all about nature study before you begin to teach it. Use your five senses; study together with your pupils; keep records; make use of what children know when they first come to school; do not begin with books, but work towards them; do not expect to cover all the Nature Study Course laid down; but select that part for which you can get material, or in which you can best interest your pupils. As for school gardens, remember that they must be educative; the object is not primarily to raise crops, but to train the child. Do not begin a school garden until you have secured the support of the trustees and of some leading citizens. Begin to plan your garden *now*. Interest the children and have them make their plans through the winter. Send to Director for literature, and apply during the winter to the Department of Agriculture for seeds.

Much interested discussion and many questions followed Director Steeves' address.

In the afternoon a short and practical paper on Nature and Animal Study was read by Miss L. Annie Steeves, and a full discussion on Home Lessons was led by Mr. E. D. McPhee.

The officers elected for next year are:—President, Mr. A. D. Jonah; Vice-President, Miss Ethel Murphy; Secretary-Treasurer, Mr. S. W. Irons. Additional members of Executive, Miss Grace Harper, Mr. E. D. McPhee.

Sackville was decided upon for the next meeting-place, and the Executive were empowered to invite the teachers of Cumberland County, N. S., to join in this meeting.

The Alumnae Society of the St. John High School are giving an unusual opportunity to the people of St. John and the neighbourhood, in bringing Mr. Alfred Noyes to the city. Mr. Noyes is well known, not only as one of the first rank of modern poets, but also as an advocate of peace. His lecture, which is called "The Great Green Table," is on the subject of peace, and it is understood that he will also read from his own poems. Everyone who is interested in literature ought to second this effort of the society by being one of the audience at the York Theatre on November 4th.

The price of radium has risen because of an unprecedented demand. It is now said to be worth one hundred and fifteen dollars a gram.

P. E. I. SUMMER SCHOOL FOR TEACHERS.

The first Summer School for Teachers organized by the P. E. I. Department of Education, was held at Charlottetown, July 28th to August 9th. The aim of the Department in organizing this school, was to enable the teachers to become better qualified to teach elementary agriculture.

The attendance at the school was very satisfactory, upwards of two hundred and sixty teachers were enrolled, being about fifty per cent. of the teachers of the province.

The work of the school was based upon Brittain's Elementary Agriculture and Nature Study. Five hours each day were devoted to class work, in addition to which the afternoons were devoted to field work when excursions was taken to points of interest, such as the Experimental Farm, etc.

Besides the purely agricultural work, classes were held in drawing, music, methods in teaching, and physical training. An interesting course of evening lectures was delivered.

The teachers who attended the course had their railway fare paid for them by the government, and those who completed the course received a bonus of \$5.00.

The expenses attendant upon this course were defrayed by the Agricultural Department out of the special grant received from the Dominion Government for agricultural purposes.

The course was a very successful one, and the government is to be congratulated on the success of their first venture in conducting a vacation school.

A COMPOSITOR'S TROUBLES.

The following story is too good to be lost. Not only does it graphically illustrate the sort of thing that the compositor occasionally is expected to understand, but it throws an interesting light on the English language itself, as the sentence which puzzled the compositor is perfectly good English, although at first sight it reads like gibberish.

An author had written an essay on the English Constitution, so the story goes, and on receiving a proof, noticed that the compositor had omitted a couple of spaces in one sentence, running the words "king and queen" together as follows:—

KINGANDQUEEN.

The author's marginal note was as follows, and it is said that the compositor's breath was completely taken away until the meaning of the correction dawned on him in time to save his life:

"Please leave more room between King and and and and and Queen."

FOR THE PRIMARY DEPARTMENT.

PAPER-CUTTING IN A PRIMARY ROOM.

No person will need to do more than take one backward look into childhood days to realize how much the children of to-day will enjoy paper cutting. Do you not think that they will enthusiastically put their utmost effort into it?

We have passed the stage when we need to insist upon the fact that the hands of our children should be trained. Paper cutting, as a means to this end, should not be overlooked. It also puts another medium of expression into the hands of the children. For paper cutting will do for small children all that drawing can do and a very great deal more. Any teacher can sum up the benefits without enumeration here.

How shall we start about this work? First, the use of the scissors must be mastered. Cut long strips of newspaper or colored paper four inches wide. Cut across this strip, and we have material for chains. Cutting pictures from magazines is another way. This is often not satisfactory, as the pictures are too intricate. But there is our old friend, the hectograph, to fall back upon, and it really is less trouble to prepare outlines on paper from a hectograph than to hunt up magazines. Another feature of this plan is that the cuttings are of some value. For instance, an apple outlined, cut, and colored by the children, or a flower, say a tulip. When you are teaching your lessons about Dutch children, why not have a border of tulips colored at the top of your blackboard? Paper pasted on the blackboard can be washed off easily, and your blackboard re-decorated with the children's work. Even white paper is very effective for blackboard decoration. One teacher hectographed reindeer, which on account of the branching antlers required careful cutting, also a Santa Claus in a sleigh. When the children had finished cutting and had assisted the teacher to paste the pictures upon the board, their delight knew no bounds.

From this we come to free-hand cutting — simple forms first, fruit, vegetables, household articles, and so on. Some supply houses furnish designs of animals — solid black with a white background — which are a wonderful help toward accurate cutting; and so the results are much more pleasant and satisfactory for all. Then stories can be illustrated. In January, what fun to cut out a big white bear or an Eskimo house!

Then perhaps we shall try a picture. This will require continued lessons in preparing material for it. In the arrangement all sorts of opportunities present themselves for originality. Suppose we are studying Hiawatha; we'll make his home. We do not need to quote Longfellow's description. Hiawatha lived in a wigwam; let us make it. Wigwams are smoky-looking; so the top must be colored brown. Behind the wigwam was a forest, and we shall need many trees; so they are cut and colored. Now that we have trees and wigwam, we are ready to make our picture. Let us take our paste and mounting paper. Can any one hear in fancy, "Please teacher, where is the "Big Sea Water?" Now where shall it be? At the right, or the left, or across the front of the picture? Let the child decide. With his blue crayon he will soon overcome this difficulty. One thoughtful boy has cut a stump to paste in, also. Another thinks a canoe should certainly be on that "Big Sea Water." And so the suggestions keep coming in.

What use can the rural school teacher make of this? What should it not mean to the poor little first grade pupils who are inevitably left to their own devices a great deal of the time? A pair of blunt scissors suitable for paper cutting are worth ten cents, probably a dollar a dozen. White paper can be purchased cheaply, done up in a large roll and commonly called "pantry or shelf" paper. Library paste is convenient. Next, the hectograph, here is the recipe.:

1 lb. glycerine, 2 oz. gelatine, 1 oz. granulated sugar, 1 pt. water. Heat glycerine and sugar in a double boiler, dissolve the gelatine in the water, then add the glycerine, stirring as little as possible. When it has boiled and gelatine is all dissolved strain into a pan through cheese cloth. Do not use for a few days. After using, rinse the ink off with boiling water, tipping the pan so that it will drain off quickly.

For a small class, a few sheets of carbon paper will save the trouble of making and using a hectograph.
—WESTERN TEACHER.

An old subscriber, writing from Philadelphia says "I am so glad that the REVIEW is to be continued. There is so much in it, that is both useful and interesting. I like it all, and among other things I value very much the notes on Current Events. They give the sum and substance of the world's news in such a concise way."

SEAT WORK WITH LETTERS

Teachers who cut out or hectograph letters for the children may find it useful to know the relative frequency with which the different letters occur. According to Edgar Allan Poe, we use the letter "e" oftener than any other. Then follow, in order of frequency, a, o, i, d, h, m, r, s, t, u, y, c, f, g, l, m, w, b, k, p, q, x, z.

Write or print the child's name in a vertical line at the left of a page in the exercise book, or a sheet of paper, or lay the letters in a vertical line on the desk.

Let the children fill out each line as far as they can, with words beginning with the same letter. Thus:—

IN, IT, IS, IF.

ON, OF, OUT, OFF, ONE.

NO, NOT, NOW.

AN, AT, ARE.

HE, HIM, HAT.

AN, AT, AS.

RAT, RAN, ROW.

RAY, RUN, RED.

YOU, YET, YES.

Let the children make with their letters all the names that they can spell of,

- (a). Things in the room.
- (b). Children in the room.
- (c). People at home.
- (d). Animals and flowers.
- (e). Things to eat.
- (f). Things to wear.
- (g). Things to play with.

This work may also be set for older children after they can write fairly well, to be done in writing.

A SPELLING GAME.

I find this very helpful in teaching little folks how to spell new words, and drilling on old ones.

Give a sentence and spell the word you want learned—thus:

The man is on the w-a-g-o-n and the f-l-o-w-e-r is in the vase—letting the children think of the word you've spelled.

They are soon able to make up sentences of their own and spell the words for the others to guess—and they will learn to spell new words just especially to give the others.

Keep count of the number of times each child makes a correct guess, to see who wins.

The children enjoy it and at the same time get the needed drill. Be sure to always call it a game though; I find that most children dislike the word "drill."—POPULAR EDUCATOR.

FIRST PRIZE LETTER SUMMER SCHOOL OF SCIENCE.

HALIFAX, N. S., July 24th, 1913.

S. A. STARRATT, Esq.

Pres. Summer School of Science.

DEAR MR. STARRATT:—One is apt to take their experiences more or less as they come along, enjoy the pleasant sensations, regret the unpleasant ones and let them pass on their way with perhaps a feeling of gratitude for the good that was in them, or, more likely, with a "O-there-they-go-what-comes-next" spirit. The Summer School in its wisdom, has called a halt on these careless feelings and has asked the point-blank question "What has the Summer School done for you?" and in common courtesy we, of the pupils' desks, must answer when we are addressed.

I entered the School reluctantly at the end of a hard year; I was weary and wanted only rest and sunshine and the freedom to do as I pleased, but, because I felt that I must do my part as a citizen of Halifax and lend at least my presence as a sort of "Thank you" to the strangers who had chosen my beautiful home city as their seat of learning, and because the Supervisor (who is wiser than we sometimes wish to think) seemed to desire it so earnestly, I shook off my laziness and, with great reluctance, enrolled as a pupil. Is it sufficient apology for my lack of enthusiasm to say that I am enjoying every moment of my stay among you, and to promise to go next year unless some unforeseen accident intervenes?

The School has been to me a revelation. With the exception of the Literature, the subjects I am studying are altogether new, and I am getting the impressions that come only with the first doing of things.

Until the other day, to me, a farm was a field, or several fields, in which some strong men worked digging the earth, planting seeds and pottering about waiting for sunshine and rain to make his plants grow. Then he gathered his harvest and stored it and waited until it was time to begin all over again. That, with modifications, was my conception of the Science of Agriculture. Now my view is broader and I know (what before I merely accepted) that the Wonderful Scientist has spent thousands of years preparing to make that harvest possible. The thought is not new, of course, but the meaning is clearer, and today mountain peaks

and my tiny garden plot have a very much closer relation to each other than I ever dreamed of.

Wonderful as this all is, it is the Botany that has brought me to my knees and bowed my heart in humbleness before the Most Marvellous. That God Almighty should be interested in the making of worlds is not difficult to understand, but when I learn the beautiful, delicate, minute perfection of a tiny cell, so small that my eyes can hardly see it, and when I know that that wee thing is throbbing with life, then do I walk in holy places indeed, and wonder, and worship.

In the Literature classes too, I have been dwelling in the midst of beauty. New songs have been singing themselves into my heart. Old songs have taken on new meanings. Slumbering ambitions have been awakened. The world has become a more beautiful place to live in and a wider field to work in.

So much for the work. Whether I can go back to my babies in September and tell them the wonderful details I have learned, matters little. I can give them something they may keep when school days, and I, are shadowy memories.

From another point of view:— I have met socially and in the class rooms, a number of people who are about the accomplishment of a purpose. The time is too short and we are too many to become well acquainted, but some personalities have made themselves felt and I shall remember them gratefully in the future. There are many types. There are the serious, dignified ones. You feel that their work and their selves are closely united and you are inspired by them to get nearer to your own work. There are the veterans, the infants; the hard-workers, the butterflies; the retiring ones, the merry ones. All do their part towards making up the atmosphere of the School—an atmosphere that can be had only under such conditions. These influences shake you out of yourself and you become not one—but one of the crowd.

Most of us have been out of school for some years and have grown up in the profession. It is hard to get back to the pupil stage, but once there we see things as we shall never see them as teachers. Retaining our teachers' experience, and obtaining the pupil-spirit, little misunderstandings between ourselves and our children straighten themselves out. Why? Simply because we are no longer on the platform but in the more lowly seat at the desk, and in the mental attitude of the pupil.

Again, we have the chance of seeing other teachers teach, and it is natural to make comparison between yourself, your style, preparation of work, presentation of lesson, manner before the class—and these qualities in the lecturer before you. There are many, many things to admire and adopt and a few to avoid.

I can make no criticism. I do not know where improvement could be made. There are, no doubt, many imperfections, but thanks to the men at the head of affairs, these are not permitted to ruffle the surface of the waters, and things are kept smooth for the students.

Thanking you and the other Professors and Officers for your never-failing patience and courtesy and for the effort you have made to give us your best.

I am,

Very sincerely yours,

LILLIE J. MITCHELL.

TRAFALGAR DAY, OCTOBER 21ST.

The Navy League suggests, among other ways of observing Trafalgar Day, the display of Nelson's signal, "England expects that every man will do his duty." This should be the key-note of the lesson to be drawn from the day. Duty, not glory, has been first in the mind of every man who has served his country truly. "Thank God, I have done my duty" were the great sailor's last words.

"Wars may cease," says Captain Mahan, in his *Life of Nelson*, "but the need for heroism shall not depart from the earth, while man remains man, and evil exists to be redressed. Wherever danger has to be faced, or duty to be done, at cost of self, men will draw inspiration from the name and needs of Nelson."

The following books and poems are suggested for preparing lessons on Nelson. Southey's "Life of Nelson," Mahan's "Life of Nelson," "Nelson and His Captains," W. H. Fitchett, "Nelson" in *Heroes of the Nations*, and in *English Men of Action Series*.

Browning, "Home Thoughts from the Sea;" Scott, Introduction to the 1st Canto of *Marmion*—lines on Nelson; Tennyson, "Ode on the Death of the Duke of Wellington."

See also, Review for October, 1905.

FOR FRIDAY AFTERNOONS.

Motion Play—The Winds.

(To Teach Directions.)

1.

Up from the south came a gentle breeze,
 (point south)
 It rocked the bird's nest in the trees,
 (wave both arms)
 It said, "The summer is almost over,
 Fly away birds, it is late October." (wave arms)

2.

Oh, ho, oh, ho, hear the west winds blow,
 (point west)
 The daisy buds are nodding so, (nod heads)
 It said, "We'll shake the gay leaves down,
 (raise and lower arms)
 Leaves of red and yellow and brown."

3.

Up from the east came the wind again (point east)
 Down fell the gentle drops of rain (tap desks)
 It said, "We will water the thirsty flowers,
 For earth is refreshed by gentle showers."

4.

The north wind came with rollicking song,
 It shook the apple-tree, sturdy and strong,
 (shake with right hand)
 It said, "It is winter, ha! ha! ho! ho!
 Then down fell the feathery flakes of snow!
 (Raise and lower arms, gently shaking fingers).
Kindergarten-Primary Magazine.

An Apple Lesson.

(By a Girl).

When teacher called the apple class, they gathered round
 to see
 What question deep in apple lore their task that day might
 be
 "Now tell me," said the teacher to little Polly Brown,
 "Do apple seeds grow pointing up, or are they pointing
 down?"

Poor Polly didn't know, for she had never thought to look,
 (And that's the kind of question you can't find in a book.)

And of the whole big apple class not one small pupil knew
 If apple seeds point up or down! But, then, my dear, do
 you? —*St. Nicholas.*

God comes down in the rain,
 And the crops grow tall—
 This is the country faith,
 And the best of all.

—Norman Gale.

Farewell Summer.

(The Wild Aster.)

In the meadows near the mill,
 By the wayside, on the hill;
 In the fields that wander down
 To the edges of the town,
 And beside the farm house door,
 "Farewell summer" blooms once more.

Little asters blue and white,
 Many as the stars at night.
 Summer's flowers have blown away;
 Now you come to make us gay.
 When the fields are growing brown,
 And the leaves come fluttering down.

How I love to gather you,
 Purple flowers and white and blue,
 On the cloudy afternoons,
 When the wind makes pleasant tunes
 In the orchard grasses dry,
 Where the ripened apples lie.

Dear to me are days of spring,
 And the summer makes me sing;
 Winter has its times of cheer,
 But the best days of the year
 Come when, close beside our door,
 "Farewell summer" blooms once more.

—*St. Nicholas.*

Faded Leaves.

The hills are bright with maples yet;
 But down the level land
 The beech-leaves rustle in the wind
 As dry and brown as sand.

The clouds in bars of rusty red
 Along the hilltops glow,
 And in the still, sharp air the frost
 Is like a dream of snow.

The berries of the briar rose
 Have lost their rounded pride,
 The bitter-sweet chrysanthemums
 Are drooping heavy-eyed.

The pigeons' black and wavering lines
 Are swinging toward the sun;
 And all the wide and withered fields
 Proclaim the summer done.

His store of nuts and acorns now
 The squirrel hastes to gain,
 And sets his house in order for
 The winter's dreary reign.

'Tis time to light the evening fire,
 To read good books, to sing
 The low and lovely songs that breathe
 Of the eternal spring. —*Alice Carey.*

MISTAKES IN DISCIPLINE

1. It is a mistake to try to teach without good order. A prime condition of successful school work is the undivided attention of pupil and teacher to the work in hand. Secure good order before attempting any other work, and when secured, maintain it.

2. It is a mistake to suppose that "good order" means perfect quiet. The order of a successful school is the order of an earnest, active community, steadily, quietly and cheerfully engaged in the pursuit of legitimate business. This pursuit will necessarily be attended with some noise. The order of life, not death, is what is wanted. Order may be heaven's first law; but it is not heaven's only law. Order is not repression, but direction. The necessary noise of legitimate work is not disorder.

3. It is a mistake to call for order in general terms, and to hedge the conduct of children with numerous rules. Children usually know what is and what is not proper conduct. Leave them as free as possible to regulate their own conduct, and yourself as free as possible to deal with each offence specifically and to adopt punishment — when punishment is necessary — to the exigencies of each case as it shall arise. The child who in a moment of forgetfulness asks his neighbor for a pencil is much less a criminal than he who maliciously annoys all around him by talking; but each has equally been guilty of a technical violation of the law which says, "Thou shalt not whisper." No sensible teacher would administer the same punishment to each.

4. It is a mistake to be too demonstrative in maintaining order. Control as far as possible, without seeming to control. Do not be the most disorderly person in the school in your efforts to maintain order. Banging a bell or pounding a table may attract momentary attention, but will not secure quiet and work.

5. It is a mistake to speak in too high a key. As a rule, the more and the more loudly you speak, the less and the less distinctly the pupils will speak.

6. It is a sad, cruel mistake to compel children to sit quietly in one position for even half an hour. Try so sitting yourself, if you would find one good reason for not making such requirement. Insist upon graceful, healthful position, but not upon absolute stillness. The younger the pupil the more frequently should be permitted changes of position

7. It is a mistake to be satisfied with order that continues only while the teacher is present. He who preserves the peace only when under the immediate observation of the police is not usually considered a model citizen. Men and women who possess the power of self-control are the products the schools should return to the State. The less police duty a teacher does — and is compelled to do — the better for the future of the State.

8. It is a mistake to treat pupils as though they were anxious to violate the rules of the school. If you would make a villain of a man, treat him as though you thought him one. The law does not assume that any man is a criminal. But you must distinguish between blind confidence and a frank trust in those who have not proved unworthy.

9. It is a mistake to punish by pulling ears, striking upon the heads, etc., or to inflict corporal punishment in any form, except in extreme cases. In maintaining order, always appeal to the highest available motive. "Do right for right's sake" should be the rule of action; but secure order by some means. — Intelligence

THE FATHER OF ALL HOT SPRINGS.

The Sprudel is the most ancient of all Carlsbad's fountains, the father of all hot springs, and still pours forth in primeval vigor the greatest flood of all. It rises like a geyser in its basin, a steaming, spouting column an inch and a half thick and from six to thirteen feet high. Around it stands priestesses, the spring-girls, dressed in white waterproof uniforms. They fix the drinking-cups at the end of poles and catch the water as it comes fresh from the earth's heart. The geologists call Carlsbad's fountains virgin or volcanic water. They have their sources in no rainfall sinking to fill subterranean reservoirs. Created in those glowing inner laboratories of the mother earth, the water here leaps to light and air for the first time.

—*Harper's Magazine for August.*

NOT ON THE MAP.

Joan was a most conscientious pupil, eight years old. During one of the school study periods the teacher noticed her searching a large atlas intently with a most puzzled expression. After a few minutes she asked the child what she was looking for.

"Oh," said the anxious student, "Miss Kane said we were to find all the places spoken of in the history lesson on the map, and it says that 'Columbus was at the Point of Starvation,' and I can't find it anywhere!"

USEFUL BOOKS.

The Living Plant.

The new volume of the American Nature Series, "The Living Plant," by William F. Ganong, Ph.D., Professor of Botany in Smith College, will prove a welcome edition to our botanical literature. It is the first attempt in our literature to present to the reading public in a strong, clear, comprehensive way, the main phenomena of plant life.

The book is designed, as Professor Ganong points out in the preface, not for his "botanical colleagues," neither "as a digest of our present scientific knowledge of plant physiology for the use of experts in that subject," but "it seeks to present to all who have interest to learn, an accurate and vivid conception of the principal things in plant life."

The whole book seems designed for private reading, rather than for a class text. Even the paper and the binding suggest the library rather than the class-room. It is a book for the people by one of our most inspiring and popular teachers. Dr. Ganong needs no introduction to the teachers and general reading public of the Maritime Provinces. We predict for his book a large circulation. The layman will find it a charming substitute for romance, biography and history for many an evening reading; the student and lover of nature, most interesting accounts of the unfolding of nature's ways; and the teacher, rare models of clear, logical presentation of the main features of plant activity.

A list of the subjects treated in the eighteen chapters will help to give some idea of the attractive arrangement and scope of the work:

CHAPTER I.—The various ways in which plants appeal to the interests and minds of men.

II.—The prevalence of green color in plants, and the reason why it exists.

III.—The profound effect on the structure of plants produced by the need for exposure to light.

IV.—The kinds of work that are done by plants, and the source of their power to do it.

V.—The various substances made by plants and the uses thereof to them and to us.

VI.—The substance that is alive in plants and its many remarkable qualities.

VII.—The way plants draw into themselves the various materials they need.

VIII.—The ways in which substances are transported through plants, and finally removed therefrom.

IX.—The peculiar power possessed by plants to adjust their individual parts to their immediate surroundings.

X.—The various ways in which plants resist the hostile forces around them.

XI.—The ways in which plants perpetuate their kinds, and multiply themselves in number.

XII.—The many remarkable arrangements by which plants secure union of the sexes.

XIII.—The ways in which plants increase in size, and form their various parts.

XIV.—The orderly cycles pursued in growth, and the remarkable results of the disturbance thereof.

XV.—The many remarkable arrangements by which plants secure change of location.

XVI.—The methods of origin of new species and structures, and the causes of their fitness to the places they live in.

XVII.—The remarkable improvements made in plants by man, and the way he brings it about.

XVIII.—The physical groups into which plants naturally fall, whether by relationship or habit.

Throughout the book the author holds closely to Darwinian adaptation, and in a rather apologetic tone explains that he has "omitted a good many of the newest ideas" regarding plant life. He declares for vitalism as opposed to mechanism, "Not a supernatural vitalism of the theological type, and certainly not designed for theological needs, but a perfectly natural vitalism, based on the superior interpretive power of an hypothesis assuming the existence in Nature of an X-entity, additional to matter and energy, but of the same cosmic rank as they, and manifesting itself to our senses only through its power to keep a certain quantity of matter and energy in the continual orderly ferment we call life."

Since the author seems *so sure* of his vitalism we cannot help but wish that he had given some explanation regarding the superior interpretive power of the hypothesis mentioned above, and also some direction for finding the value of X in the X-entity.

The work is published by Henry Holt & Co., New York, 1913, and is an 8vo. volume, bound in green cloth with gold lettering, comprising xii + 478 pages, and attractively illustrated, with 178 figures, and several colored plates. Price \$3.50.

H. G. PERRY.

QUOTATIONS.

Train up thy mind to feel content:
What matters then how low thy store?
What we enjoy, and not possess
Makes rich or poor.

—W. H. Davies.

WHEN MIDDLE NAMES WERE BANNED.

People have not always been allowed the pleasure of having as many names as they wish; indeed, 400 years ago not even a middle name was allowed in England. It was illegal. The old English law was definite and admitted of no infraction of its ruling.

The only exception made to this iron-clad regulation was in the case of persons of royal rank. If they really wished it they could boast a middle name, but woe to the person of ordinary rank who was sufficiently unwise or obstinate to insist on having more than two appellations.

For the first offence he would very likely be tied to a whipping post and severely lashed. For a second offence he would endure some more lasting punishment, perhaps the removal of his thumbs or his ears. And if he still persisted in his stubbornness he would be hanged.

NELSON'S HAND AT TENERIFFE.

Nelson's left-handedness was an attainment of which he could be legitimately proud, as he was. J. G. Gren tells a story of the admiral's visit to Great Yarmouth to receive his freedom of the borough. "A storm met him on his landing, but the danger failed to prevent his appearance on the quay. When the freeman's oath was tendered to him the town clerk noticed that the hero placed his left hand on the book. Shocked at the legal impropriety, he said, 'Your right hand, my lord.' 'That,' observed Nelson, 'is at Teneriffe'."

Some old soldiers in the French army had disobeyed orders, and were sentenced to be shot. On their way to the place of execution they passed by the general, and pointed to the scars on their faces and breasts. This action did far more than speech could have done. The general instantly stopped the execution and gave the men a free pardon.

The wireless operators within a thousand miles of Portsmouth, England, were astonished the other day when this striking message came to them out of the air:

They sleep in peace amid the eternal snows,
Their goal achieved, their duty nobly done,
And over those victor's crown is won,
The loud, shrill requiem of the tempest blows

The impressive lines, said to be the first verses ever sent by wireless telegraph, are from a tribute to Captain Scott and his companions, published not long ago in the *London Mail*. The British Admiralty, communicating with the battle-ship *New Zealand* off the west coast of Africa, sent them in order to test its wireless system.

—*Youth's Companion*.

CURRENT EVENTS.

The McMillan Arctic expedition which has set out to find Crocker Land has reached Etah, in North Greenland. He has with him twenty Eskimos, men, women and children, among them being two who were with Cook.

The newest battle cruiser, the *Queen Mary*, is said to be the fastest vessel afloat. On a recent trial trip she made a speed of forty-one miles an hour.

It is expected that Home Rule for Ireland, when it comes, will be followed by Home Rule for Scotland; the idea being that each of the four nations—England, Ireland, Scotland and Wales—should have its own legislature, with an Imperial Parliament to look after matters of common interest to all.

The whole length of the Panama Canal will be flooded this month, and vessels will be sent through it probably before the close of the year.

There is a suggestion that the United States of Columbia may soon proceed to construct another interoceanic canal by way of the Atrato River, and that English capitalists are ready to undertake its construction.

The International Congress on Alcoholism has met in Italy, and proposes to hold its next meeting in the United States in 1915. Three international institutions were organized at the recent meeting—a bureau for combating alcoholism, a federation for the protection of native races, and a federation of physicians opposed to prescribing alcoholic liquors in medical cases.

The first presidential election in the Chinese Republic was to take place this month; and recognition by foreign government will probably follow.

The approaching election in Mexico may not lead to a settlement of the difficulties in that country, as the northern rebels have already refused to abide by the result.

The second Balkan war has been soon followed by a third, though it is but a year since the outbreak of the first took all Europe by surprise. The Albanians have made a fierce attack upon Serbia, and after some success, have been driven back. It is not supposed that this ends the matter, for the Albanians in Servian territory will probably rise again at the first opportunity. Meanwhile a fourth war seems imminent, for the Turks demand that Greece shall cede back to them the islands taken during the last war, and Greece is preparing to defend them.

Paper made from seaweed, and said to be waterproof, fireproof and odorless, has been invented by an English chemist.

The wheat harvest of the great grain growing regions of the northern hemisphere is reported to be nearly two hundred and fifty million bushels more than that of last year. Among European countries which show a gain are Great Britain, Denmark, Prussia, Spain, Italy, Switzerland and Russia. Russia's crop area is ten times as great as Canada's; and there are in that vast country over five thousand agricultural societies with instructors supported by five public funds.

Winnipeg has now become the greatest wheat centre of North America, over a hundred and forty million bushels having been inspected there within the last twelve months.

A herd of five hundred buffaloes has been discovered in Alberta, showing that as a wild animal the buffalo is not yet quite extinct.

Dr. William Wakeham, of Gaspé, has been appointed as the Canadian member of the Permanent Mixed Fishery Commission. The United States representative is Dr. Hugh Smith; and the third member is Dr. Hoeck, appointed by the Queen of the Netherlands. The duty of the commission is to decide upon the reasonableness of any regulation made by Canada or the United States concerning fisheries in treaty waters under the agreement of last year.

An expedition under R. J. Flaherty, of Toronto, has been sent out by Sir William Mackenzie for the exploration of Labrador in search for valuable minerals. This is the third expedition under the same management, and great results are expected.

In the upper Mackenzie valley there is a country as large as Manitoba, every bit of it fit for settlement; or, at least, such is the report of a government official who has just returned from a trip to the far northland. At Fort Good Hope, within the Arctic circle, were the best gardens he saw on the whole route.

Appointed by Pope Pius X. to revise the Latin Bible, Abbot Gasquet and his assistants have been engaged in the preliminary work of gathering manuscripts for the last five years. For this purpose they have visited all the great libraries of Europe, and fourteen thousand biblical manuscripts have been brought to light, and photographic copies made. It will require many years to finish the work.

OCTOBER.

There is a beautiful spirit breathing now
Its mellowed richness on the clustered trees
And, from a beaker full of richest dyes,
Pouring new glory on the autumn woods,
And dipping in warm light the pillared clouds.

— *Longfellow.*

SCHOOL AND COLLEGE.

Rothsay College for Boys opened after the summer holidays, with about sixty pupils in residence. Two new wings have been added to the college and electric lighting has been installed.

Fredericton schools are full to overflowing. A new department for grades V and VI has been opened in the Assembly Hall of the High School.

Miss Sarah Hill, leading graduate of Hawkins Academy, Newcastle, was the winner of the fifty dollar scholarship donated by Sir Max Aitken. Miss Hill is now attending the Normal School at Fredericton.

Miss Frances L. Fish, M.A., vice-principal of the Campbellton, N. B., grammar school, spent her summer vacation in doing graduate work at the University of Chicago.

Mr. Edgar Wood, of Cumberland Co., N. S., who was a member of the class of 1894 at Mount Allison, visited Sackville this summer. Mr. Wood, who is an M. A. of Cornell University has been for seventeen years principal

of the Normal School at Hawaii. He is now enjoying a year's leave of absence, which is to be spent in travel.

Miss Elizabeth Maddon, of Chester, N. B., has gone to St. John's, Newfoundland, to teach Domestic Science.

Among our teachers who have gone West this autumn, are Miss Hazel McCain, of Florenceville, N. B., who has taken a school in Calgary, and Miss Mary McCulloch, of Hantsport, N. S., who has gone to Edmonton.

The School Board of Amherst, N. S., are encouraged to go on with the work of securing medical inspection in the schools. At a meeting of the Board on September 16, to which rate-payers were invited, evidence was given by teachers and medical men of the benefits resulting from past work of this kind, and a resolution was unanimously passed requesting the School Commissioners to make arrangements for medical inspection and for the engagement of a competent nurse. Amherst is to be congratulated upon the co-operation of the physicians with the educational authorities in this matter, and the foresight and energy with which it is being carried through.

Among the many Canadians who crossed the sea this summer none has been more signally honoured than Dr. John Stewart, of Halifax, who received from his Alma Mater, the University of Edinburgh, the honorary degree of L.L.D.—*Public Health Journal.*

A wedding which interests many readers of the REVIEW took place at Truro on September 10, when Miss Jean Patterson, granddaughter of Dr. J. B. Calkin, M.A., L.L.D. former Principal of the Provincial Normal School, was married to Mr. A. G. Pierce, of Richibucto, N. B.

Two Nova Scotia teachers, the Misses A. M. and E. M. Ogilvie, of Elderbank, will teach this year in the Academy at New Carlisle, Bonaventure Co., P. Q.

Stellarton is putting up a \$20,000 school building for the pupils of the lower grades. It is hoped that the new building will be ready for use at the beginning of the New Year.

Dr. H. L. Stewart, late lecturer on Philosophy in Queen's University, Belfast, has been appointed to fill the Chair of Philosophy at Dalhousie University, left vacant by Professor Laird. Professor Stewart is not able to come to Canada just yet, and for a short time his place will be filled by Mr. Rupert Lodge, nephew of the famous Sir Oliver Lodge, of Birmingham University.

Miss Ida B. Jamieson, of Truro, has returned to her post on the staff of the William Penn Charter School in Philadelphia.

Halifax Ladies' College re-opened with the largest enrolment in its history. The staff remains unchanged from last year.

Lunenburg people celebrated the successful years' work done by the teachers and students of the County Academy at a meeting in the Assembly Hall on September 18th, when fifty-five dollars in gold were distributed among the pupils who had made the highest marks in the Provincial examinations. The meeting was large and enthusiastic, and well deserved tributes were paid in the speeches to Principal McKittrick.

Acadia Collegiate Academy and Business College opened on September 3, with seventy-five resident students and sixty day pupils. Principal Archibald has now ten teachers on his staff.

New Brunswick School Calendar, 1913-14.

1913		May 23	Empire Day.
Oct. 20	Thanksgiving Day. (Public Holiday.)	May 24	Victoria Day. (Public Holiday.)
Dec. 16	Examinations for III Class License.	May 26	Examinations begin for Class III Teachers' License.
Dec. 19	Schools close for Christmas vacation.	May 30	Last day on which Inspectors are authorized to receive Applications for Departmental Examinations.
1914		June 3	King's Birthday. (Public Holiday.)
Jan. 5	Schools open after Christmas Vacation.	June 5	Normal School Closing
Apr. 9	Schools close for Easter Vacation.	June 9	Final Examinations for License begin.
Apr. 15	Schools re-open after Easter Vacation.	June 22	High School Entrance Examinations begin.
May 18	Loyalist Day. (Holiday for St. John City only.)		

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RECENT BOOKS.

The Earthly Paradise is a well-known treasure-house of lovely, old-world tales, Greek and Norse. From this store some of the most interesting to children have been selected and expressed in prose by Mr. W. J. Glover in *Tales from the Earthly Paradise*. The book is intended for supplementary reading in intermediate grades. The poet's words seem to have been retained as far as is consistent with prose, but Morris' style is so particularly clear and simple that it seems a pity not to present these charming stories to children in their original form. Each tale has very practical composition exercises appended. The book is published in three parts, price, sixpence each. (A. & C. Black, 4 Soho Square, London, W.)

Volume III of "The World Literature Readers" shows the remarkable scope of native primitive life upon this continent. It deals with *Mexico, Peru, the United States and Canada*. Among the writers from whom the selections on our own country are taken are Sir Gilbert Parker, Jean Blewett, C. G. D. Roberts, Stewart Edward White and Mrs. Humphrey Ward. These are attractive books, well illustrated and give a great deal of fresh material for history, geography and literature classes. (Cloth, 276 pages, price 45 cents. Ginn & Co., Boston.)

Teachers who have difficulty in finding suggestions for composition work, either oral or written, will do well to send for *A First Book of Composition*, by Briggs and McKinney. The book is intended for the first two years in the High School, but contains many exercises that might be used in lower grades. It is very practical, including a very large number of varied exercises. In the student's hands, it would be a valuable text-book, and we can also recommend it highly for the teachers' desk. (Cloth, 300 pages, price 90 cents. Ginn & Co., Boston.)

From Ginn & Co. we have also *Sight Reading in Latin*, by H. H. Bice, head of the Latin department of the

DeWitt Cluiton High School, New York. The material for reading is taken from Caesar's "Gallic War" and "Civil War," but these extracts are preceded by easier short selections from Livy and other Latin writers. A very good feature is the exercise preceding each of the early readings and giving lists of words, drill in inflections and hints how to work at the translation. These helps are gradually discontinued, but not before they have put the student into the way of attaching a new passage intelligently. Where the book is not used in class, it might well be studied by teachers of Latin. (Cloth, 160 pp. Price 50c.)

The *Preliminary French Course*, by H. J. Chaytor, M.A., and H. E. Truelove, B.A., seems to combine some of the old-fashioned ways of teaching French with "Reform" methods. The rules of grammar are clear and the examples good; there are plenty of passages for intensive study, and the exercises for drill are excellent. Where girls and boys are beginning French too late to enter upon the necessarily long course of the direct method, this seems an admirable book to use. (Cloth, 164 pages, price 1s. 6d. University Tutorial Press, London.)

QUOTATIONS.

What is this life if, full of care,
We have no time to stand and stare?
No time to see when woods we pass,
Where squirrels hide their nuts in grass.
No time to see, in broad daylight,
Streams full of stars, like skies at night:
From Leisure, by W. H. Davies

The Sun,
Closing his benediction,
Sinks, and the darkening air
Thrills with a sense of the triumphing night;
Night with her train of stars,
And her great gift of sleep. —W. E. Henley.

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