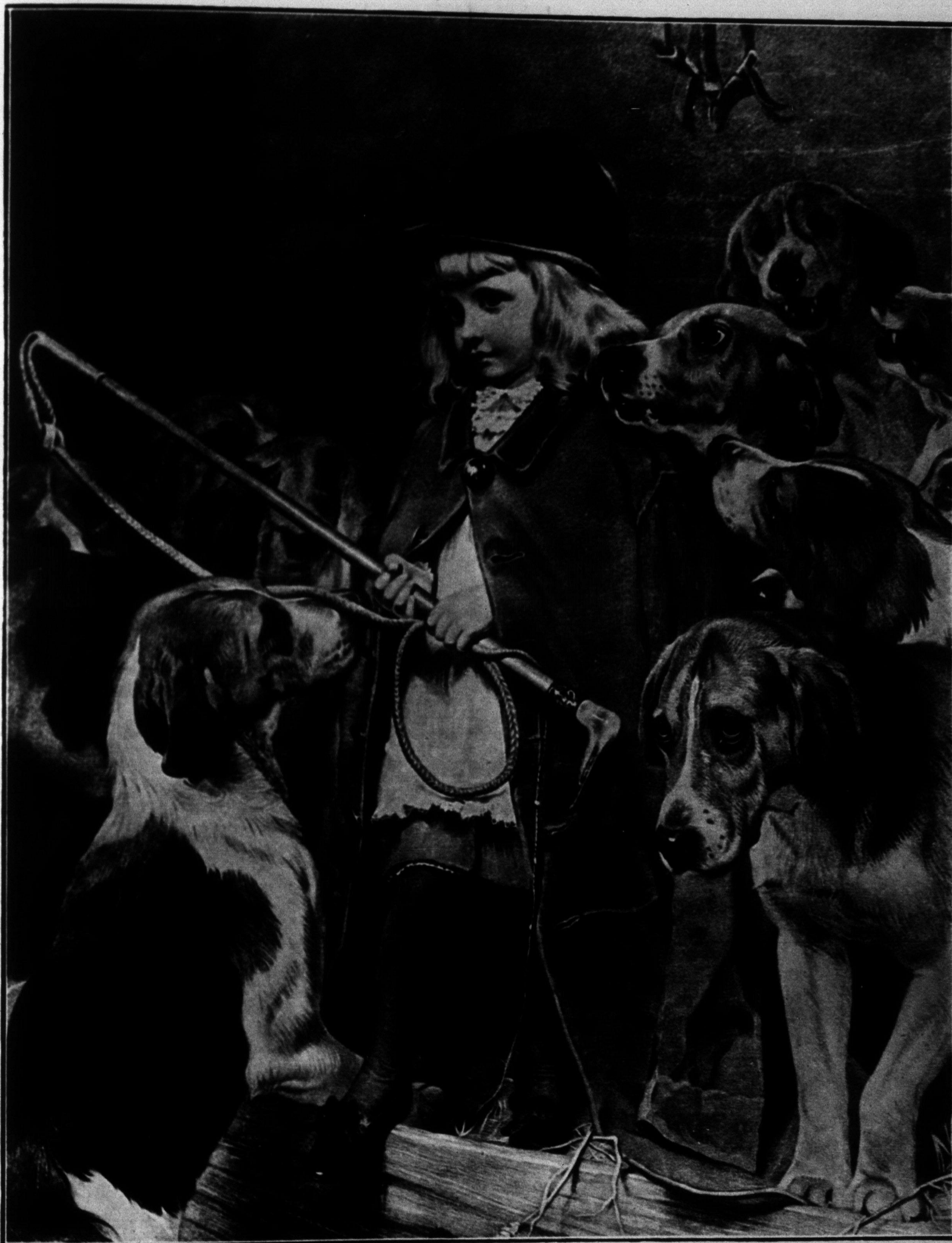


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MISSING



THE NEW MASTER

From a Painting by C. Burton Barber

The Educational Review.

Devoted to Advanced Methods of Education and General Culture.

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CONTRIBUTORS should remember that their articles are required by the 20th of each month, so that the REVIEW may be published promptly on the first day of the following month.

THE REVIEW has received reports of the Simplified Spelling Societies, which have their headquarters in London and New York. The English report gives an interesting review of the history of English spelling by the famous etymologist, Professor W. W. Skeat, who is president of the Eng-

lish society; the United States report gives a third list of simplified spellings, of which the Society or Board has approved.

THE symposium on nature study in this number is the most complete series of lessons on that subject that has appeared in the REVIEW, and will, it is hoped, lead to some interesting work in schools during this and the following month. It is the work of Mr. Shaw and Professor Smith, of Truro, and Miss Agnes Spencer, of Halifax—all accomplished nature students.

IT IS always a great pleasure to the REVIEW to note that teachers' services are being appreciated, and that an increase of salary is the measure of public appreciation. The salary of the head of one of our leading educational institutions has recently been increased to \$2,500, a recognition that excellent work and ability are beginning to be rewarded here as elsewhere.

CHARLES DARWIN and Abraham Lincoln, probably the two men who wielded the greatest influence in the past century, were born within a few hours of each other, on the 12th of February, 1809, the first at Shrewsbury, England, the second in a humble cabin in Kentucky. Nature had endowed both with a clear vision and eminent natural abilities, but that which serves to make them an example to this day and generation was their beauty of character and their unflinching honesty of purpose.

TEACHERS will find in the "Provisional Nature Study Course," recently issued by Mr. Percy J. Shaw, B. A., chairman of the sub-committee on Nature Study, Truro, N. S., a carefully prepared outline of work from grade one to grade eight. As this course is tentative, teachers are asked to write for it, make a trial of it, and to send any criticisms or suggestions to Mr. Shaw.

THE EDUCATIONAL REVIEW.

RARELY does one meet with such an interesting study of dogs as is found in the Supplement of this number. "The Young Master" has donned hunting coat and cap of the old master, and with whip in hand stands in the midst of the pack. Some are all too ready to seek favour by fawning on the master of the whip. The old dog in front on our right has a sad and thoughtful expression, as if he missed the old master. Those on the left affectionately sniff the coat, as if recalling former caresses, old hunting days and races across country. There is material in the picture for a story about dogs.

THE Halifax city council is making a strenuous attempt to reduce the school expenditure. Supervisor McKay's report, of which the REVIEW has received an advance copy, gives some interesting statistics of that city's schools during the past twenty-three years which should make trustees more tolerant of the increasing school rate. Increased school accommodation, better heating and ventilation, better furniture, higher qualifications, and therefore higher salaries of teachers, the great advance in the cost of living, an enlarged course of study, which takes in manual training, domestic science, commercial departments, drawing, medical inspection—all these, with increased efficiency of the schools, are pointed out as reasons for a not too rigid economy.

The Supervisor's report makes some interesting observations on educational conditions observed during his recent vacation visit to the United States and Western Canada, to which reference will be made in a future number.

THE death of Robert Randall McLeod, of Brookfield, N. S., came as a painful shock to his many friends in these provinces. Mr. McLeod was accustomed to spend his winters in Boston of late years, and it was there that his death took place from a sudden failure of the heart. He was an author of considerable repute, and his articles on Nature Study and other subjects have been widely read. He was a profound thinker and a lover of nature in all her aspects. In this the best side of his character was revealed, and it was this gentler impulse, derived from communion with "rural sights and rural sounds," that his friends will lovingly remember.

THE report of Mr. J. George Hodgins, the venerable and accomplished historiographer of the education department of Ontario, has been received. It is reminiscent of distinguished pioneer teachers and those who followed them, and of the debt the province owes in the matter of education to United Empire Loyalists. Many of these were from Nova Scotia and New Brunswick, where they established institutions of learning, notably King's College, Windsor, in 1790. The following interesting note is found in the report: "To the active and enterprising U. E. Loyalist women of New Brunswick, a monument was erected some years ago. The mother of the noted group of the Ryerson brothers—George, John, Egerton and Edwy—was one of these distinguished women."

A Contribution to Nature Study.

Professor W. F. Ganong's criticism in a recent number of the *Nature-Study Review* (November) is suggestive. He "maintains that the tolerably-taught scientific elementary courses of college and high school are not only educationally of high value, but are incomparably superior to any of the substitutes which have yet, in the name of nature study, been offered for them." Although his article does not directly deal with nature study in the common school, his criticisms are very useful to teachers generally. He regards the training, not the information, that is derived from such study as the all-important matter. This training, based on personal contact with nature and the related use of hand, eye and mind, "has the greatest educational merit that its benefits are not confined alone to the subject in which it is acquired, but can be felt in any occupation the student may later take up." Thus the unfolding of a seed, whether studied in the field, or in a window-box, and its development into the mature plant; a knowledge of the building up of plants and animals from tissues and cells; a knowledge of the significance of the green colour of vegetation to plants, to animals and to man,—are illuminating, far beyond their own limits; much more so, Mr. Ganong thinks, than information about the "economic status and foods of about 100 birds," and other outlines marked out for a nature study course.

He who is honest is noble
Whatever his fortune or birth.

Cary.

THE EDUCATIONAL REVIEW.

Interference with Teachers.

There are few cases, that are made public, in which teachers are interfered with in the performance of their duty. The following, taken from the Sydney, N. S., *Post*, shows a case of interference which brought a well-deserved punishment:

For a grave misdemeanor, a teacher of the Whitney Pier school whipped one of her pupils. Later, the father came to the school with the child, and so conducted himself before the school children as to impair the discipline of the school. The man shook his fist in the teacher's face and dared her to ever again punish his child. When the teacher ordered the boy to his seat, the father attempted to take the child away, and generally acted in a manner calculated to demoralize the scholars in session. Before Stipendiary Cameron the man was fined \$10, with costs of \$1.75, and in default of payment to twenty days' imprisonment. His Worship read the section of the code which governs such a case, in effect that a person who enters the school grounds and uses profane language, speaks or acts in a manner calculated to impair the discipline of the schools, shall be subject to a penalty of not more than \$20, and in default of payment to imprisonment for thirty days. In this case his Worship submitted that the action of the defendant tended to interfere with the morale or general discipline of the school. The fine was immediately paid.

The Summer School of Science.

With the lengthening days and warm sunshine come thoughts of summer vacation. How are the holidays to be spent? Now is the time to plan how to make them profitable as well as pleasant, that we may go back to our schoolrooms in the autumn not only rested, but richer for some definite gain in professional knowledge and skill. Some fortunate ones are possessed of strength and money sufficient to carry them through the admirable holiday courses of instruction provided at different universities or professional schools. But many tired teachers quail at the thought of giving up the whole, or even the greater part of their hard earned leisure to steady work. They feel their need of definite instruction, of a comparison of their work with that of others, of suggestions as to the newest and most approved methods. But they also need recreation and pleasant companionship. To such, the meeting of the Summer School of Science at Charlottetown offers the wished-for opportunity. Established twenty-two years ago by a few enthusiastic teachers, the Summer School has had a strong influence on the schools of the Maritime Provinces. It has generated enthusiasm, and extended the

knowledge of good methods of teaching. It has directed the attention of its students to new fields of study. Young teachers have gained confidence by contact with those of more experience; and older teachers, perhaps in danger of getting into ruts, and losing heart, have come away quickened and inspirited.

One great advantage of the school is the chance it gives to see, and see intelligently, different parts of our own country. This year it meets in the beautiful little city of Charlottetown, a delightful summer resort. Prince of Wales College offers its fine classrooms and modern equipment for the use of the students. The session of seventeen days is just long enough to make one wish it a little longer. The subjects include all the natural sciences taught in our schools, with literature and manual training. From one to four hours may be spent in the classroom, and the afternoons given to field work, or laboratory work, or to recreation. The students who were at Charlottetown in 1904 have not forgotten the delightful excursions in steamboats or sail boats on the Straits, or up the rivers; the strolls in the park, or the pleasant drives through the garden-like country; the evening meetings, concerts and lectures in the pretty, airy assembly room, or the kind hospitality of the Charlottetown folk. But perhaps the most satisfying recollection that is carried away from a summer school meeting, and the one that draws the students back to a second session, is the novel delight of sitting in a pupil's seat instead of a teacher's, of being responsible for none but one's self, of taking instead of giving. While the instructors must feel repaid for their holiday toil by the close attention, unflagging industry and obvious requirement of their classes.

Calendars giving particulars of the coming session will soon be circulated, but anyone can get any desired information by applying to the secretary, Mr. J. D. Seaman, Charlottetown. It is hoped that there will be a good representation in Prince Edward Island of teachers from the sister provinces.

One minute a day drill for 30 days on 100 commonly mispronounced words would fix the correct pronunciation for life with every high school pupil. The pupils would be saved embarrassment, given confidence, and acquire a habit of ease in such matters that will last them forever. How can you use the minute better?—*Pattengill*.

A New Book on Mushrooms.

The MUSHROOM, Edible and Otherwise; Its Habitat and its Time of Growth; with photographic illustrations of nearly all the common species. A guide to the study of Mushrooms, with special reference to the edible and poisonous varieties, with a view of opening up to the student of nature a wide field of useful and interesting knowledge. By M. E. Hard, M. A., Superintendent of Public Instruction, Kirkwood, Mo. (The Ohio Library Co., Columbus, Ohio).

The student of mushrooms, and indeed other of the fungi of this country, has been handicapped for the want of some authoritative work by a master hand on the subject. So much confusion has arisen in the definition and multiplication of species that some eminent authority would be welcome to put the study of these interesting forms on a more permanent scientific basis. Perhaps it is too soon to expect that. Only within the past year has there been published a systematic revision of our higher and better known plants in the seventh edition of Gray's *Manual*.

But the study of the larger fungi or mushrooms has become so interesting to an increasingly numerous body of amateur students that several more or less useful books have been published to meet the demand of those who would inquire more fully into this attractive field of botanical research. The best of these, it would seem, is the last—the book named above. There is an extraordinary amount of useful information, attractively presented in the six hundred and odd pages which compose this volume. The illustrations, all from half-tone engravings of photographs of fresh plants as they have been seen in the field by Mr. Hard, and by those careful students, Mr. C. G. Lloyd, the late Dr. W. A. Kellerman and others, are accurate productions of the mushrooms described. Illustrations are found on nearly every page of the book, and all species described, with a few exceptions, are pictured. The introduction is by the late Dr. Kellerman (an old college friend of the writer of this review), whose death took place in the forests of Guatemala early last year while following his favourite scientific pursuits. The author inscribes the book to his wife, "whose eyes quick to detect structural differences, and whose kindly and patient help, have been a constant benediction." The book is for the beginner as well as the college student. The text is singularly free from technical terms, in scholarly yet simple language, with the derivation of all scientific names of species, and with the distinctions between edible and poisonous forms very clearly stated. The page arrangements are inviting to the student. The analytical key, explanation of terms, directions for study and preservation, complete index, are direct and helpful, and without any complexity whatever.

It is a book we have much pleasure in recommending to students of one of the most absorbing pursuits of natural science.

Your paper is always of interest to me, and I give it a glad welcome because of its help and guidance in my work.

C. J. D.

Lessons in English Literature.—VI.

ELEANOR ROBINSON.

The Canterbury Tales.—Continued.

The first tale, as you know, was told by the knight. It is the story of the love of two brave knights, called Palamon and Arcite, for a lovely lady, Emelye, the sister of the Queen of Athens. It is full of adventure, and is very beautifully told, but it would need a great deal of explanation of the customs and manners of the time to make it interesting to you. All the other pilgrims, young and old, liked it; and they said it was a noble story and worth remembering.

The host was well pleased with this good beginning, and considered a little who should tell the next tale. He began to call upon the monk; but the miller, who had drunk too much ale, broke in rudely, and shouted out that he had a story to tell, and if he might not tell it now, he would ride away. Chaucer has a word to say to his readers at this point. He says:

The miller was a churl, and he told his tale as a churl would. I am going to write it down, and you may read it if you like. But please understand that I would not choose to tell such a story as this. If I am to tell you about the Canterbury pilgrims, I must tell you truly what each one said, or else tell you falsehoods. So if you do not like some of the stories, turn over the pages and find one that you do like; for there are enough to choose from, and some of them are stories of gentleness and honour and goodness.

The miller's tale was about a carpenter, and it gave offence to the reve, who was a carpenter by trade; so he told a story about a miller. Then the cook began his tale, but Chaucer never finished writing that, and if it was no better than the two that came before it, it is no loss, for they are not at all to our taste.

No more tales were told on the first day of the pilgrimage, but the next morning, about ten o'clock, the host reminded the pilgrims that they were losing time, and called upon the man of law to go on with the story telling. This learned man complained that there was nothing left for him to tell, because Chaucer had told all the stories that ever were, if not in one of his books, then in another. However, he recalled a tale that had been told him by a merchant who was long since dead. And a beautiful story it is, though very sad. The heroine is a lady named Custance, an emperor's daughter, who suffered great dangers and hardships. Her

enemies accused her of all kinds of wickedness, separated her from every one she loved, and tried to kill her. Twice was she sent adrift on the sea in an open boat, the second time with her little child in her arms. But she trusted patiently in God, and prayed to Him, and at last He delivered her out of all her troubles, and brought her safe home to her husband and her father. Then "she praiseth God a hundred thousand times." We are rather surprised that it is the dry old lawyer who tells such a touching story, and makes us feel the beauty and sweetness of Custance.

The host commended this tale. It showed, he said, that learned men knew many good things; so he asked the poor parson, another learned man, to keep to his agreement, and tell them the next tale. The parson answered politely, but was rudely interrupted by the shipman, who objected to the host's request, saying that the parson would preach a sermon instead of telling a story, and that they wanted no preaching. He really wanted to tell his own story, which, he said, had no learning in it, but was a merry tale, and would wake them all up.

The shipman was right about the parson, for when, last of all, that good man was called upon again, he said that he would tell no fables, but that, if they would listen, they might hear a moral and virtuous tale. Said he:

Why should I sow chaff when I might sow wheat? I will try to please you, but I cannot rhyme. So I will tell my tale in prose, and it shall be the last. And I pray God that He will give me skill to show you, on this journey, the way of the perfect and glorious pilgrimage that leads to the heavenly Jerusalem.

The pilgrims all thought that it was right and proper to end their stories with some good teaching, so they begged the parson to go on, and promised to listen gladly. The host, however, asked him to make haste, and to say what he had to say "in little space." The parson then preached a sermon, and a good sermon it was. But it certainly was very long, and we should not call it a tale, though Chaucer does.

In the meantime, all the other tales had been told. The prioress had a pretty, touching story of a little Christian boy who was murdered by the Jews. This made the pilgrims all very sober, and the host asked Chaucer to tell a tale of mirth to cheer them up.

Chaucer said he could not think of anything but a rhyme that he had learned a long time ago. Now

this rhyme was a funny, clever imitation of the long and tiresome rhymed stories of the time, and when Chaucer had mischievously recited about thirty verses, the host said:

"Oh, you make me tired, my ears ache with your worthless rhymes."

"Why do you stop me?" said Chaucer, demurely. "You did not stop any of the others. I'm doing the best I can."

"Because," said the host, "you are only wasting time. Stop rhyming, for pity's sake, and let us see whether you can't tell us something in prose that will be either amusing or instructive."

Then Chaucer offered to tell them "a little thing in prose," that he thought they would like. But it really was a very long and rather stupid story. It was about a man who had a very good tempered and patient wife; and when it was ended, the host said he did wish that his wife could have heard it, for she was anything but patient. Then the monk was asked for his tale, and he told a number of short stories that he had read, all about famous men who had fallen from great prosperity and happiness, to misery, such as Adam, and Alexander the Great, and Julius Cæsar. The priest who attended on the prioress next told a very amusing story about a cock and a hen. This brought them to the end of their second day's journey, and it is thought that they stopped that night at Rochester, which is thirty miles from London.

The physician was the first story-teller the next day, and he told the story of the Roman girl, Virginia, which Lord Macaulay has told in one of his "Lays." Next came the pardoner, who told one of the most impressive tales of all. Then it was the turn of the wife of Bath, and she had a great deal to say before she began her story. She said that there were a great many tales about wicked women, but they were all written by men, and that if women had only written stories, people would know more about the wicked deeds that men had done. In her story, which is of a knight and lady of King Arthur's time, the lady reads her husband a long lecture about judging people by outward appearances, and being scornful of those who are poor or of low degree. She says:

Look who that is most virtuous alway,
Prive* and apert† and most entendeth aye
To do the gentle deedès that he can,
And take him for the greatest gentleman.

* Private, retiring. † Open, frank.

Then followed the friar and the summoner with two stories of the kind that we do not want to read. But after them the clerk of Oxenford, who, you remember, was very fond of reading, told the story of patient Griselda, which he had heard in Italy from the great Italian poet, Petrarch. This is one of the most famous of all the tales; but I do not think that you would like it. Poor Griselda is made to suffer too much.

The merchant's tale is the last one told on the third day.

On the last day of the journey the squire begins a wonderful story that came from the East. Cambuscan, a king of Tartary, receives on his birthday certain magic gifts. There is a horse of brass, which can fly as swiftly as an eagle, appear or vanish at its owner's will; a magic mirror, which can foreshow all dangers; a naked sword, that can pierce any armour and inflict wounds that can be healed only when stroked with its edge; and a ring, which is intended for the king's daughter, Canace, and which makes her understand the language of birds. This story is not finished. Milton, in one of his poems, speaks of—

Him that left half told
The story of Cambuscan bold,
Of Camball and of Algarsife,
And who had Canace to wife,
That owned the virtuous ring and glass,
And of the wondrous horse of brass,
On which the Tartar king did ride.

The frankeleyn's story is told of a lady and two knights in Brittany, and the second nun tells of the life and death of Saint Cecilia. Then, after a yeoman and the manuciple have each said their say comes the sermon of the poor parson, which ends the story telling.

Although Chaucer did not finish all the stories he had planned, he wrote a conclusion addressed to his readers, of which these are the opening sentences:

Now pray I to them all who hear this little treatise or read it, that if there be anything in it that pleaseth them, that thereof they thank our Lord Jesus Christ, from whom proceedeth all skill and all goodness. And if there be anything that displeaseth them, I pray them also that they set it down to the fault of my own ignorance, and not to my will, that would full fain have said better if I had had knowledge.

March can be pardoned for any sort of antic, snow flurries or wind storms, because it means spring, no matter if winter patches are still lingering.

Spring Nature Study.—A Symposium.

BY PERCY J. SHAW, B. A., AND OTHERS.

Trees.

Trees, twigs of trees, and some of the insects which infest trees make interesting subjects for winter nature study. Some of your pupils will know the trees in the vicinity of the school. Try them on a few which can be seen from the school-room door or window. They will be anxious to tell you the names of those they know. After they have named a few correctly, ask them how they can tell kinds apart. How could they tell that this one is a maple, that one an elm, and another one a beech or poplar at their present distance from these trees, provided they did not know before? In this way draw from them that different kinds of trees have shapes of their own. This shape, or form, of the entire tree is called its habit. Find a tree with an oval habit, one with a conical habit, and one with a spreading habit. Study the trees in your neighborhood, and see what other forms you can find. After you and the pupils have agreed upon the forms or habits of several kinds of trees, have blackboard drawings made to show these habits, and have the children make drawings in their note-books.

Observe the outline of a tree against the dull winter sky. Note its height, shape and size of top, how many main branches there are, how the branches are arranged on the main trunk, the direction of the branches, whether the twigs are few or many, crooked or straight. Having observed these points in any tree, compare one kind of tree with another, and note how they differ in these features. Compare an apple tree with an elm, an elm with a maple, and a poplar with a beech. Having made comparisons between very dissimilar trees, compare those which are much alike, as the different kinds of maples, of elms, of oaks, of poplars. As one's powers of observation become trained, compare the different varieties of the same kind of fruit trees, if there are good orchards in the vicinity. In apples, compare the Baldwin with the Spy, the King with the Twenty Ounce.—*L. H. Bailey, in Cornell Nature Study Leaflet.*

In the winter fruit growers can tell many of the varieties of trees by their habits. At Middleton last December I had a few minutes before the train was due, and was in search of some red pine twigs. A farmer, who was a stranger there, pointed to three tall trees over a quarter of a mile away, and said: "That middle tree is a red pine tree, the other two are white pines." How did he know? Can any of your pupils identify trees at such a distance? If so, get them to tell how they do it. It

is one of the best exercises in English for the pupil to try to express clearly in language ideas gained through the study of things, thus conforming to the demand of the educational reformers, that the study of things should precede or be united with the study of words.

Twigs and Buds.

Have the children bring in twigs of some of the following: alder, elder, beech, birch, maple, lilac, willow and horse-chestnut. Put some of these in water and place them in a sunny window to study the opening of buds later. Take two twigs for comparison, such as the alder and the elder. What difference do you find between them? How many kinds of buds are there on the alder? How many on the elder? Beginners are apt to overlook one kind on these twigs. Can you find them all? Compare the shapes of buds, their arrangements and the ways they are attached to the twig in the alder and maple, the elder and the lilac, the beech and the willow. What difference do you see in the bark of the alder and the elder? What become more conspicuous as you follow down the alder twig? Are the same to be found on the elder twig? Where do the characteristic markings of birch bark originate? Can you account for their shape? What is there to show that the twigs had leaves last year? Where were the leaves situated? Can you tell what part of the twig grew last year? What part the year before? (The red maple twigs have ring markings, which will help you). Notice the large terminal bud on the beech, the apple, or the horse-chestnut. Is it probable that there was a similar bud at the end of the present two-year-old growth one year ago? What did this bud develop into? What mark did it leave? What became of some of the other buds on the two-year-old wood? As a rule, branches are found only on the wood two years old or older. What one of these twigs sometimes has branches on the one-year-old growth?

The following is an outline used by a successful teacher in the study of buds and twigs:

1. Buds—colour, feel, arrangement. (Explain terminal and lateral) and compare their sizes.
2. Scars under each bud with their dots.
3. Girdle scars here and there around the branch.
4. Lenticels (dots or lines) on the bark, and the change in size and shape as they become older.

Put twigs in water, each child marking a certain bud for his own study. Change the water every few days, and occasionally cut off the lower ends of the twigs to

expose a fresh surface to the water. Draw the bud as it changes. The children see that from some buds come shoots or branches, and from others flowers. The scales, now that their work of protecting the tender bud-leaves is over, do not grow, but are pushed off by the stem as it enlarges, leaving rings around the stem. Each year's growth will be marked off by one or more rings around the stem.

Let the pupils trace out the ages of different branches. To find out what caused the leaf-scars on last year's growth, go back one year, when the present one-year-old twig was a bud. Its growth last summer corresponded to the growth of the bud they are watching, and the new leaves correspond in arrangement with the scars, so they see that the scars were left by the leaves when they fell.

Teachers will find that different kinds of twigs are suited for different purposes of study. For example, the bud of the lilac, elder and balm-of-gilead open quickly, and make considerable growth when placed in water; but the lilac is poor for showing leaf-scars, and neither is very good for the study of girdle scars. The elder and horse-chestnut are good for showing leaf-scars, and the beech and horse-chestnut for girdle-scars. The buds of the horse-chestnut are slow in opening. Of course, every teacher of little children will have in the schoolroom twigs of willow to show the development of pussies before they appear out of doors. At the end of the season for the study of buds and twigs, the teacher and children should be able to distinguish fruit-buds and leaf-buds on several kinds of twigs. Fruit-growers can tell now what the prospect is for blossoms on their trees next spring. The answer to the question, What is a bud, what does it contain? can be found by watching buds develop in the schoolroom. What vegetable cut through from top to bottom shows the same structure as a bud?

Insects.

One of the trees mentioned above retains some of its dead leaves until spring. Can you tell which? In the winter and spring scattering dead leaves are often found on several kinds of deciduous trees. If some of the twigs, with leaves attached, are brought into the schoolroom and examined, the children will see that there is often a cocoon attached to the twig with the leaf. This cocoon may contain the pupa of an insect, or it may be empty. It may be accompanied by the eggs of an insect. It is the cocoon of the tussock moth, one of the most widely distributed insects in Eastern Canada. It sometimes does considerable damage to fruit trees, and is of interest because of the parasites which

feed upon it, and because it is so often mistaken for the brown-tailed moth. Many cocoons of this insect have been sent to the Agricultural College under the impression that they were the nests of the brown-tailed moth, and yet the two insects are easily distinguished in this way: The brown-tailed moth spends the winter in the larval stage in nests, not cocoons, of about 300 caterpillars each, while the tussock moth passes the winter in the egg state. This is the time of year to look for the nests of the brown-tailed moth, and a good time to find the cocoons and eggs of the tussock moth. Most every reader of the REVIEW knows that the campaign against the brown-tailed and gypsy moths has cost millions of dollars in the New England States. The damage has not been to fruit-trees and ornamental trees alone. The brown-tailed moth is a menace to the health of the people. Hence, every effort should be made to check the spread as soon as it is found in the country.

A teacher who has been very successful in teaching the subject of insects has supplied me with the following information on the tussock moth:

The tussock moth furnishes good material for nature study work during the winter. The cocoons are attached to leaves and also to a twig or branch. They may be found on nearly all our common trees, including the evergreens. The cocoon occurs in a number of conditions:

1. The empty cocoon containing only one brown outer skin of the pupa. From this cocoon the male (winged) moth escaped last autumn.
2. The cocoon with either a bunch of eggs covered with a gray foamy covering or a single naked layer of eggs upon one side of the cocoon. These eggs were laid there in the late autumn by the wingless female moth.
3. The cocoon containing one or two pupæ of a parasitic fly. These pupæ are each about one-fourth of an inch long and nearly cylindrical. The fly which develops from each looks like and is about the size of the house fly.
4. The cocoon is partly filled with slender light brown cocoons, in which are yellow maggot-like creatures with dark heads. These are parasitic ichneumon flies. These small cocoons are spun of silk, and not like the hard brown cocoon of "3," which is the dried outer skin of the pupa.
5. Often the dead caterpillar or partly developed moth is found in the cocoon. Death in such cases is usually due to disease, or to as yet unexplained causes.

These cocoons are often mistaken for the nests of the brown-tailed moth larvæ. They should not be, as the latter are spun of white or gray silk, and completely enclose the leaf or leaf-stalk, and contain very many small brown hairy caterpillars. The leaf and leaf-stalks are never enclosed by the cocoon of the tussock, but is attached to one side of it with the leaf stalk usually free.

The Moose.

WILLIAM H. MOORE.

The true American elk, commonly called the moose (*Alces machlis*), is found from New Brunswick westward to British Columbia. It is probably as plentiful in the Maritime Provinces as in any part of the northern United States or Canada. A considerable area of these provinces is covered with an undergrowth of shrubs and small trees upon which this animal subsists. From the smaller of these it takes the tender twigs, and from the larger it peels the bark. The striped maple, often called the moosewood, furnishes it with an abundance of succulent twigs, in winter, and in summer it has both twigs and leaves. These maples sometimes attain a diameter of six or eight inches, and from their trunks the bark is stripped by the sharp chisel-like teeth of the lower jaw of the moose; but it is seldom that it is stripped all around the tree, being generally removed only from one side. It is claimed by some that the sagacity of the animal warns it not to completely strip the tree, lest it should die; but it is more likely that the moose finds it more convenient to turn to another tree than to circle around the same one. To this bark, which is a winter diet, various grasses and plants that grow in streams are added in the summer, especially the long rootstalks of pond lilies. In quest of these plants, which are sometimes taken in fully six feet of water, the moose swims and wades, and occasionally reaches so far below the water as to be almost submerged. A summer camper-out has told me that he has often approached these animals in a canoe on their feeding grounds in our northern lakes as close as almost to touch them at times when the head was under water in search of food.

It has been asserted by some writers that the moose, having a smooth tongue, is unable to crop grasses; but to any one who is observant, it will be known that the tongue of a horse is quite as smooth as that of a moose. These writers would do well to remember that both the moose and the horse have prehensile upper lips, which assist them in gathering the food into their mouths.

Throughout the summer the water courses, especially the shallow lakes and slow-moving streams, arising in swampy forests, are much frequented by these animals, as during that season a different variety of food from that upon which they feed

in winter may be obtained. During the winter they yard—that is to say, a number of the animals gather together—and have common paths along which they may move freely to secure their food. We must credit these animals with an unusual amount of foresight in yarding on the northern side rather than on the southern side of a crest, for the snow on the latter is much more likely to crust than that on the former, and a crusting of the snow greatly impedes the progress of the moose, thus putting them more in the power of any enemies that might be lurking about.

The moose is the largest animal now existing of the deer family, standing often as high as six feet, and sometimes weighing 1,200 pounds; but notwithstanding its great size, it is very fleet of foot. When brought to bay, a blow with its fore foot or horns is a very serious matter for the huntsman. Often when pursued by man they have their intelligence to thank for their escape, for sometimes, if closely followed, they double in their tracks and stand motionless in some thicket until the hunter has slipped by, when they quickly glide away. At other times they make such a commotion as to unnerve any but an experienced hunter, and thus escape.

The males, only, are provided with antlers, and with these they often deal death to their enemies and rivals. The antlers drop off in early winter, and when the new ones are growing they are apparently very sensitive; so that the females have little to fear from their larger and stronger mates. Moose begin to breed when two or three years old, a single fawn being born the first time, and after that as many as two or three at a time.

The antlers of the male become larger each year until the animal has passed his prime, or has become seriously injured, when the quality deteriorates, and we find antlers much deformed in typical shape and size. From observations made upon the antlers secured from different localities, it would seem that the different places have their different strains of breeds. The antlers in each locality seem to be more or less after one pattern, which makes it appear as though one sire dominates a certain territory.

Numerous cases have been recorded of bull moose having, unprovoked, given battle to man, but the peculiar part of this is that we have as yet to hear of a real sportsman being so attacked. Circumstantial evidence goes to prove that these unpro-

voked attacks are only excuses given for the killing of a moose out of season, or by an unlicensed hunter. During the rutting season the males are at times rather headstrong, but they never actually attack a man without provocation.

The ungainly body of the little calf moose, perched on long stilt-like legs, presents a ludicrous appearance; but it is an object of the tenderest solicitude on the part of the mother, who will often charge fiercely upon hunters if they approach too near, or try in sport to capture their offspring. A female calf moose once became so tame through being left unmolested that she used to come right up to a camp occupied by a brother of the writer and after a time allowed itself to be photographed in several different positions.

Is Your School Well Equipped.

Have you a source to answer such questions as

1. What are CONSOLS?
2. How is CHAUFFEUR pronounced?
3. What is a SKEW?
4. What is SALVAGE?
5. What is TELEPHEME?

No school can do the most effective work unless supplied with Webster's International Dictionary. This reference library in a single volume answers with final authority all kinds of questions in language, the trades, arts and sciences, geography, biography, fiction, foreign words, etc. President Eliot, of Harvard University, fittingly says: "*The International is a wonderfully compact storehouse of accurate information.*"

You will notice elsewhere in these columns that the publishers, G. & C. Merriam Co., of Springfield, Mass., offer to send specimen pages, etc. Mention this paper in your request and they will include a useful set of coloured maps, pocket size. Do not longer delay owning an up-to-date dictionary. Get the best, which means the INTERNATIONAL.

Plans for the new territorial army of the Empire include five or six territorial divisions in Canada, five in Australia, one in New Zealand, and four or five in South Africa, in addition to the fourteen existing divisions of the territorial forces of the United Kingdom. This, with the sixteen divisions of regulars, would make an imperial army of forty-six divisions. In the olden days of slow and deliberate warfare, volunteers could be enrolled after the country was attacked. Now it is necessary to be ready for defence when the attack comes.

How the Public Schools Can Aid in Fighting Consumption.

[A continuation of the article in the February REVIEW, by a different writer.]

If it be an established fact that consumption is a preventable disease, can we have more preventive measures, and can they be applied at a still earlier stage? This is a question that naturally arises in the mind of those who have been accustomed to regard the spread of this disease as inevitable. Happily we can confidently answer that it is yielding to preventive measures, and these are now so well known and thoroughly reliable that they may be confidently included in our system of education, even in quite early stages.

Facts concerning the value of fresh air, rest, exercise, wholesome food, and especially of sunlight, can be presented to the younger scholars, and the boys in particular could be drilled in the rigid observance of one fundamental rule: "Do not spit; and, if possible, do not allow others to do so." It should be distinctly understood that "no one in health spits." The spirit of chivalry can be fostered in these matters, and a proper *esprit de corps* established, which will be maintained even beyond the school premises, and out of school hours. It is important that the regulations of the Provincial Board of Health are not always regarded in the construction of public buildings, and "health readers" may be studied amid very uncleanly surroundings, because school districts do not allow the "education" which they pay for to become effective in the school premises for want of some slight structural change, or the more frequent or judicious cleansing of the building and its furniture. But the unwisdom and ultimate costliness of all this is being recognized, and the health and general efficiency of the scholars is accorded a much higher value.

More and more it is becoming evident that this crusade against tuberculosis is really a movement for general betterment of all classes and conditions of people. We see that persons and organizations that appeared to be restricted in their range, when working exclusively for, let us say, public baths, or playgrounds, or physical exercise, or school gardens, are parts of a complex movement for attacking the common foes of mankind, or agencies for bringing more light and sweetness into life.

To return to our point, as to methods actually adopted in public schools, we may say that the first

public school for consumptive and pre-consumptive children was opened in Providence, R. I., last January. The sessions are held entirely in the open air. Brookline has followed, and, as might be expected, Boston also. These latter instances were at first private ventures, but proved so successful that the school authorities have taken up the matter and intend to pursue it. The board of education of New York provides a school on an old ferry-boat for the Bellevue Hospital day camp. The appointments of these schools are like those with which we are familiar, except that soap-stones are provided to keep the feet warm in very cold weather. It is gratifying to note that the percentage of colds is smaller than in ordinary schools.

The first school that adopted systematic teaching about tuberculosis is in Michigan, or, we may say, the first state to adopt the requirement was Michigan. This step was taken in 1895, and it may be noted that the nature of several infectious diseases is clearly described to the scholars. In New Jersey aphorisms, or short pithy texts, are learned, and Nova Scotia has adopted this method by prescribing the copying of such sentences in the penmanship exercises. Massachusetts, North and South Carolina, are all moving towards the introduction of a tuberculosis primer, or the insertion of a chapter on this matter in the physiology textbook.

The best book that has appeared so far has been prepared for the district of Columbia, where they use a small book prepared by men who not only know the facts of the disease, but understand how to adapt the instruction to the use of some of the lower grades. Doubtless there are physicians in these provinces who could contribute to this branch of literature, but there is no doubt also that arrangements could be made with the district of Columbia for the use of their useful and attractive manual.

Little Wilbur was eating luncheon with his mother. Presently she noticed that he was eating his jelly with a spoon.

"Wilbur, dear," she said to him, "you must not eat your jelly with your spoon."

"I have to, mother," he replied.

"No, dear, you don't have to. Put your jelly on your bread."

"I did put it on my bread, mother," said Wilbur, "but it won't stay there; it's too nervous."—*The January Delineator.*

Prize Stories.

Two prizes were offered, the first for the best and the next for the second best story on the picture that appeared in the December REVIEW. The names of the winners of the prizes were published in the January number, and the stories were to be published in February, but they were overlooked. They are given below:

WHAT I SEE IN THE PICTURE.

Long, long ago a little acorn fell to the ground and planted itself there very firmly. A little squirrel coming along found the acorn, and was just going to run off with it when a great hawk came along, and the squirrel had to flee for his life; so the acorn was left very near the place where it fell, and had to grow there. Some time after this the squirrel felt hungry and remembered the acorn, but it was nowhere to be found. It had sunk into the soft earth. The next year there was a little tree where the acorn had been, and it grew and grew up towards the sky. "Oh, how I do wish that I could be as tall as my mother!" it sighed. But the tree had to be patient for a while. It kept on growing till it was quite tall. One day some boys came into the woods, and they thought that one of the oak limbs would be good for the fire some cold winter morning; so up the tree one of the boys climbed and cut off the limb and took it home.

Soon the rain came and rotted the wood, so that it would be very easy for a squirrel or woodpecker to claw out.

One day, very early in the spring, some bright-eyed squirrels were jumping from tree to tree. They spied the decayed spot, and clawed and clawed till they had a nice hole, big enough for a whole family of squirrels to live in. They threw back some of the decayed wood, brought moss, and made a soft nest. Soon there were five little squirrels in it. The little squirrels grew bigger and bigger, until they could jump from tree to tree and gather nuts for themselves.

At last, Jack Frost came, turning the leaves red and orange and other pretty colours. Soon afterwards they fell to the ground. Then the snow came, and soon Christmas.

On Christmas morning the little squirrels went out to dinner, leaving their father and mother at home. Just at the front of their house was a nice branch on which they could sit. So they came out on the branch, and brought some hazel nuts with them. While they were eating, a little chickadee came and sang a song, and they enjoyed their dinner very much.

ANNA CREIGHTON (age 10),

Middle Musquodoboit,
Halifax County, Nova Scotia.

THE AUTUMN DAY FEAST.

One cold autumn day two little squirrels came forth from an old oak tree with a supply of hazel nuts which they had stored away in the late autumn. The place they

were eating them was near the large hollow tree. All of a sudden, a little piper hopped up on a branch close beside the squirrels. He seemed to want to have a little chat with the feasters. "Won't you have some hazel nuts?" asked the squirrels of the piper. "No, thank you!" said the piper. "I do not like that kind of a meal. I eat worms, insects and seeds." The squirrels are very skilful in breaking their nuts, but I do not think the piper could do it at all, or he would have accepted the kind invitation to dinner. To show that he is thankful for the invitation, he is piping his merry tune as they eat.

ISABEL PROUDFOOT (age 11).

Hopewell, N. S.

Opening Exercises.

The old saying—

"A Sabbath well spent
Brings a week of content,"

may be rendered for the teacher,

"The op'ning hour well spent
Brings a day of content,"

for it is true that during the whole day there is no period more important, more far-reaching in its influence, than the ten or fifteen minutes devoted each day to the opening exercises. Begin the day aright, get the pupils interested, enthusiastic, in touch with you.

Have the opening exercises as varied as possible. If you must do the same thing every day, do it in a different way.

Don't sing the same songs every morning. Let the children choose what they will sing. Have a solo occasionally, or a duet, or a quartet. Practice the special music after school so it will be a surprise for the other children. Let the pupils tell a joke or two some morning for a change. A hearty laugh cheers the atmosphere wonderfully.

Keep on with the news of the day. There is no better way to secure the parents' interest in your school than by getting the children interested in the affairs of the work-a-day world.

If a girl has a gift for elocution, help her to get up a recitation for morning exercises.

Celebrate anniversary occasions, and birthdays of famous men and women. Invite the parents to be present at these celebrations.

Occasionally turn your exercises over to a committee of pupils. You will be surprised to find what interesting programmes they can arrange.

Some dull morning spend the entire opening period in singing. It will brighten the whole day.

—*Journal of Education.*

Tardiness.

No greater moral wrong can be done a child than permitting him to habituate himself to dilatory and irregular practices. No business plant can be operated successfully when its employees report to work at any hour they please. No employer would continue on his pay roll men who are persistently guilty of such practices. And no less can the school, nor should it be expected of it, inasmuch as it is the most important manufacturing plant in the world. If its output is to control the commercial, political and social interests of this country, there must have been instilled into the life of its product, by rigid enforcement of rules, those virtues which establish beyond question habits of regularity and promptness. It is no more the teacher's duty to be at school day after day than it is the child's. Neither can be excused except in case of sickness or some pressing necessity. Irregularity of attendance and lateness at school are the breeders of contempt for law and order.

The appended clipping from an unknown author shows the social necessity for the early inculcation of these virtues. It reads: "The best laid plans; the most important affairs; the fortunes of individuals; the weal of nations, honour, life itself, are daily sacrificed because somebody is 'behind time.' There are men who always fail in whatever they undertake, simply because they are 'behind time.' There are others who put off reformation year after year till death seizes them, and they perish unrepentant, because forever 'behind time.' Five minutes in a crisis is worth five years. It is but a little period, yet it has often saved a fortune or redeemed a people. If there is one virtue that should be cultivated more than another by him who would succeed in life, it is punctuality; if there is one error, that should be avoided, it is being 'behind time.'"—*Selected.*

Ask a teacher of any high school in a town where country pupils are enrolled and he will tell you instantly that the country scholars outstrip all the rest. Many think it is because of the healthful exercise and rugged lives these boys and girls lead, but in a great measure they owe their mental grasp to the fact that their teachers never aimed too high. What they know, they know well, and the extra things that are essential, they can pick up in a short time. I have seen country pupils enter the higher

grades just below the high school without the slightest knowledge of physiology, or grammar, or music, and graduate with honours some years later, while those who have had all the frills and long terms fell far behind them.

There are a few bright children in every class who can master most of the studies, and it would seem the course of instruction in many places is designed for them instead of the common everyday pupils. In your own little domain strive to keep simplicity and thoroughness ever before you, for you can accomplish very little by aiming too high. Give the boys and girls enough work to keep them busy, but do not overload them.—*Popular Educator.*

A Lesson for Teachers.

Homer was a bright boy, but he would idle away his time or work so slowly that he seldom had the whole of his arithmetic lesson. Reproof, keeping after school to do his work, and other things did no good. One morning I called him to me before school, and told him that I was going to require of him only half as many examples as the rest of the class. His paper, I said, would be marked *Good* if he had the first half of each lesson. I explained that I did not wish to require of a pupil more than he could do. His bright eyes gave me a searching glance. "I can do as many as anyone in the class," he said.

"Yes," said I, "if you work after school hours; but I don't want you to do that."

"I'll bet you," he insisted emphatically, "that I can do more examples in one period than any other boy or girl in the class."

He was told that he might try the full lesson that day. When his paper came in he had worked every example, and added a few of his own making. Homer always had his lesson after that.—*Popular Educator.*

He called for a city beautiful;
He shouted it day by day;
He wanted a city where noise was not,
Where the spirit of art should sway;
He wanted a city that should be fair,
Where filth might never be seen,
And forgot, in spite of the zeal he had,
To keep his back yard clean.

—*The Congregationalist.*

You Can Own a Pine Forest.

All who have had the privilege of living among the pines or in a place easily accessible to the fragrant forests will treasure two thoughts presented by George W. Wilder in the March *Delineator*, and the thoughts doubtless will lead to action. The two thoughts are: First, Now is the time to plant pine seeds; second, Now is the time to transplant pine that nature has planted for you.

The next month or six weeks is the time during which to plant pine seeds, whether you pursue the "scientific" method or the "easy way," says Mr. Wilder. The "scientific" method, that is, planting the seeds in a prepared seed-bed, and two years from now transplanting them, is, of course, the better way, the only sure way. The "easy way," planting the seeds just where you hope ultimately to have your pine forest, is better than no way at all. Now is the time to plant, whatever way you elect.

This spring, next spring and the following spring will be occasions on which, with practically no work, the wise man whose farm nature has blessed with a planting of pine seeds can multiply what nature has done for him.

In some sections in 1907, in other sections in 1908, nature planted lavishly of pines. They have sprung, or will spring, up in spots, ten, twenty, maybe even fifty pines to a square foot, and be scattered over an acre or two acres of land. The wise man who owns such a piece of land has only to take up and transplant. If he has an acre covered with young pine anywhere from two inches to a foot tall, averaging, say, ten to a foot, he can make that good for twelve to fifteen acres of pine by resetting them during the wet spring season some five feet apart. Thus it saves nature from her own wastefulness, and with a few days' work makes this acre of pine seed, which, through its own self-destruction, would some years from now be worth only two hundred and fifty dollars, show a promise of three thousand to four thousand dollars. This really seems worth while.

This is the beautiful, blessed way
That will make you glad at the end of the day:

"Not the things that I like to do,
But the things that are right to do;
Not everything that I want to do,
But whatever I ought to do." —Selected.

Telling Pupils their Marks.

"No, I never give back examination papers; the pupils always want to know why they are marked so and so, and it makes no end of trouble."

"What in the world are you here for?" was the question that rose to my lips when I heard this remark. As if the very purpose of a written examination was not that the pupil may find out where he is ignorant of the subject he is studying and correct his errors! Too much trouble to explain the marks! Did you do all the examining and marking simply for the sake of putting some figures down in a record book? If you did, then heaven help your pupils! You never will.

No, a mark, whether it be in letters or figures, whether it be given for oral recitation or written test, a mark that cannot be explained and justified to an ordinary intelligent and fair-minded pupil, simply should not have been given at all. Pupils have a right to know how they stand, and why they are lower than somebody else, and it is the teacher's business to see that they do know these things.—
The Western Teacher.

Teaching Made up of Little Things.

The person who teaches a good school does a great work—no one is doing a greater—yet his work is made up of little things, so little that they do not seem to be worthy of mention. This is, no doubt, the cause of many a failure. If the teacher could only realize that this little thing and that little thing were really important, they would receive their proper attention. A class in reading will serve as an illustration.

The first mistake is made when the class is called by not seeing that every other book, and paper, and pencil, and plaything is laid away, and by not waiting until every pupil has assumed a proper position and is ready to give attention. All this is small business, and some pupils at first may think "you are awfully particular about nothing," but a high degree of attention and interest in the recitation will never be secured in any other way, let the teacher work as hard as he may, and without attention and interest the recitation is dead.

The next mistake is made when the first pupil is called upon to read, by not seeing that he first takes a proper position, and this includes his feet, chest, head, arms and book. One cannot read

well, or will not, who assumes a careless or indifferent attitude. The intimate relation between the mental and physical is nowhere more evident than in a reading recitation.

The third mistake is made by allowing the pupil to read so low that he cannot be distinctly heard in any part of the room, and this is a subterfuge to which poor readers almost invariably resort. By reading low they feel that their mistakes will not be so great, so marked, and thus pass unnoticed. It is also impossible to hold the attention of a class to reading which they cannot hear. It would be hard to think of a greater mistake a teacher could make than to let a pupil read in a tone that cannot be heard by all the members of the class, because it is certain death to all attention and interest in the recitation.

These three examples illustrate how a teacher's work is made up of little things. It would be difficult to name three smaller things, and yet any one of them is sufficient to ruin a recitation in reading which should be the high-water mark in a school.

While these things are little, and it is impossible for the teacher to make himself appear little in the eyes of his pupils and their parents in trying to get them, the strong teacher secures them without apparently any effort, and has the unbounded admiration of his pupils and their parents—and the strong teacher is generally the one who has sufficiently prepared himself and works at his job.—*The School News.*

The Two Kinds of Sport.

"'Tis a beautiful morning," a sportsman said;
"The world looks so happy, let's each take a gun,
Go out and kill something for pastime and fun,
And proudest be he who counts the most dead."

They blotted out lives that were happy and good;
Blinded eyes, and broke wings that delighted to soar,
They killed for mere pleasure, and crippled and tore,
Regardless of aught but the hunger for blood.

"'Tis a beautiful morning," a sportsman cried,
Who carried a kodak instead of a gun;
"The world looks so happy, so golden the sun,
I'll slip to the woods where the wild things hide."

The deer that he "shot" never dreamed of his aim,
Yet the bird that he caught went on with her song;
Peace followed his footsteps, not slaughter and wrong,
Yet rich were his "trophies" and varied his "game."
—*Our Dumb Animals.*

The Nebular and Planetesimal Theories.

The planetesimal hypothesis of Professor T. C. Chamberlain and others assumes an origin of the earth directly opposite to that accorded to the nebular hypothesis propounded by Kant and Laplace. The latter hypothesis holds the existence of a mass of incandescent vapor which by condensation and rotation was differentiated into successive rings; the latter being gathered up into planets while still retaining intense heat. The new hypothesis assumes that the disseminated planet-forming matter had lost its heat while yet existing in the loose form, as rings or zones of the parent nebula, and that the globular planets were formed by the slow accretion or infalling of cold, discrete bodies or particles (planetesimals). The old hypothesis assumes an original hot globe, with shrinking on account of cooling; the new regards the globe as originally and always cold at the surface, and the interior heat as the product of condensation through gravity. While the old hypothesis involves the existence of a primal heated atmosphere and ocean consisting of the more volatile substances of the earth's mass, the new derives the atmosphere and ocean from the earth's interior by a slow process of expulsion due to pressure and heat.—*The Journal of Geography.*

Germination Any time of the Year.

Lessons in germination of seeds like peas, beans, corn, squash and the like may go on at any time of the school year. Sowing of seeds in the schoolroom for serious growth should be undertaken in March or early April. Avoid the months of December, January, and early February. The reasons for this are two: First, too little sunshine, and second, too much baked air in the schoolroom. During the months mentioned the number of hours of actual sunshine are surprisingly small. The days are short, and from the point of view of the plant what light we get is of a weak, inefficient character. These months are also the coldest months, and to keep a comfortable temperature in the schoolroom a greater amount of fuel is burned. This heat is made available by first baking air and then pushing it into the schoolroom. Baked air gives plants a most uncomfortable feeling. The combination of puny light and high temperature is not good. Plants that are thrifty at a summer temperature of 75 degrees to 90 degrees under the

strong glaring sun should in winter, when the light is feeble, be kept at a day temperature of 60 degrees, and that of night at 45 degrees. I recall how once a principal of a school in a comparatively new building showed me the perfect sanitary conditions of different rooms. In one room was a collection of thrifty plants, giving every evidence of plant comfort. Those plants told me the conditions of heat and ventilation more eloquently than the best sanitary engineer could have done. Beginning with March the average is not so cold, and, therefore, the air that is supplied the schoolrooms is not so much baked, and has a greater per cent of moisture.—*Home Nature Study Course*.

Sense Training for March.

A study of March as the windy month may be profitable and lay the foundation of closer observation of some of the phenomena of nature.

Is there snow on the ground to-day? Is it thawing or freezing outside? Which way does the wind blow? Draw on the board a weather vane to show me which way it blows. What does the mercury say to us to-day? What shall we name this month when we see how many days the wind has blown hard? Draw pictures of people going down a street; of children going to school. How shall I know from your pictures that the wind blows? Find out when the sun rises. When it sets. Is to-day longer or shorter than Christmas day? Is it colder or warmer? Is there more snow or less?

Look at the trees. Are they dead? How can you tell? Where are there any leaves? How are they covered? Make a picture to tell what you saw when I cut a bud open. Can you find any old leaves hanging on the trees? Pull them off. What did you find under them? Cut the bud open and see if these have more covering or less than the others. Why?

Bring a horse-chestnut twig to school. See the bud on the end. What can you tell me about it? Look at the stem of the twig. What do you see there? What will come there next summer? What do you think is in the bud? Look at the twig that has been in our glass of water for a week or two. What do you find in that end bud? Put our bud and twig in water, too, and see if the same thing will happen.

Look at your twigs and see if any of them have tried to come out too soon. If they have, they will have no little green leaves folded in their brown coats. See if there are any little buds hidden by them to help the tree grow if Jack Frost has hurt them.—*C. M. H., in The Western Teacher*.

Busy Work.

One winter, while teaching a country school nine miles from any village, I utilized calendars for the busy work of my school. The winter being severe, I seldom got my mail, and the schoolroom helps I had sent for were so delayed I had to "put on my thinking cap" to find something to take their place, and the result of those thoughts I will now give for the benefit of other teachers similarly situated.

I took a calendar which had very large figures on each leaf. Having some thin cardboard, I fastened each leaf on a piece of cardboard of same size. I gave each pupil one leaf, and it is really surprising the variety of uses these leaves were put to. It was considered a rare treat and reward for the pupils to cut these leaves into squares, one number on a square. Then the additions, subtractions, etc., which each pupil evolved from his leaf (or squares) were remarkable. These were small pupils, and I was amazed to see how diligently they would search for the square, with answer to problem to place beneath it. For instance, $10+12=22$, etc.

A teacher can use one calendar (the twelve leaves) usually more than one term. I was surprised that so few of the numbers were lost, also surprised at the rapidity with which the pupils learned to add and subtract. Each pupil seemed to take pride in his box of numbers, and in taking care of it. Sometimes the exercises were varied by copying the numbers on slate or blackboard, each trying to write them as nicely as in the copy.

This simple play-study kept them quiet and interested, and taught them what they would, at their tender years, have felt a hardship to have been compelled to learn by rote. It also pleased the parents, and gave the children new ideas as to the uses of the once despised old calendars.—*Mrs. A. L. Thompson.—Exchange*.

The Review Question Box.

A subscriber sends some twigs of witch hazel which he reports "in full bloom" in the woods near Riverside, N. B., growing in over two feet of snow. He adds that it is remarkable to have forest specimens in bloom in the open air of our mid-winter. But it is not safe to draw such conclusions from this shrub. The witch hazel is an exception to most other plants in its behaviour. When October leaves have fallen, and plants generally have prepared for winter, the witch hazel uncurls its yellow ribbon-like flowers as if forgetful of the season. The yellow petals often remain throughout the winter, though in a withered condition, and in spring look as if they had just died while the calyx lobes persist and the two styles are fresh and green on the downy ovary. Our correspondent will thus see that this is only the winter condition of the witch hazel, which blossoms in late autumn and perfects its hard nut-like fruit in the following spring and summer.

The twig enclosed, "showing buds about to burst," is from the hobble-bush (*Viburnum lanthanoides*). This is another example of the winter state of some plants, especially certain trees or shrubs. The two rusty infolded leaves remain in that state on the ends of the twigs throughout the winter, and when spring comes are the first leaves of this shrub to unfold.

The question relating to the pronunciation of Chaucer will receive attention next month; also an arithmetic problem, too late for solution in this number.

Health of our children is another quarter where we need to advance. For four or five hours a day we herd our children in the schools and give them a vitiated atmosphere. Personally, I enjoy the open window and sleeping practically out-of-doors. I have been in schoolrooms here when I thought every additional five minutes in that bad air was a drag. I haven't thrown up the window because the still somewhat unenlightened condition of the teaching profession made me doubt whether such an act would be welcome. Cold air doesn't necessarily mean colds. I am told by explorers that they never have colds at the North Pole. Health is the problem, and I don't know that much progress has been made in the medical knowledge of the teaching profession.—*Chas. W. Eliot.*

For Friday Afternoons.**Character Hints.**

1. My first is a gentleman very unique,
Unparalleled—A. No. 1, so to speak.
2. Two men engaged in a fiendish plot,
The good was hanged and the bad was not.
3. Shrewd and miserly, witty and wise,
He brought down fame by a string from the skies.
4. A ripe red apple gave him the clue,
His dog a candle overthrew.
5. In England and France three cardinals great,
Who ruled the people, the king and the state.
6. He threw an inkstand at Satan, and bade him be quiet,
A diet of worms was his principal diet.
7. The greatest writer known to fame,
And no one knows how to spell his name.
8. A knave on the wool sack, a god with his pen,
The greatest, the wisest, the meanest of men.
9. An old man hanged one terrible day,
But his soul is marching on for aye.
10. Crossing a rivulet made him great,
He threw down his mantle and met his fate.
11. A very remarkable pioneer,
Mixed up somehow with an egg, I hear.
12. Amid many a nation and peril he strayed,
Saved once by a compass, and once by a maid.
13. A queen who was witty, vain, learned and bold,
Once cruel, once loving, a terrible scold.
14. Amid battle and bloodshed her white pathway led,
From a sheep farm, through fame, to a fiery bed.
15. He lived and died and left no trace,
Is famed, though no one saw his face.
16. Wise, good and brave he nobly reigned,
His hostess once of him complained.
17. He won a warrior's mighty game,
His opponent bore his Christian name.
18. He freed the land that holds back the sea,
By a little spaniel saved was he.

(Answers next month).

—*Woman's Home Companion for March.*

Game for Indoor Recess.

A blackboard game not generally known is called "soldiers." Two boys each draw a row of ten o's about a quarter of an inch in size and half an inch apart; the two rows must be separated by a distance of twelve or fifteen inches. Each boy takes a piece of chalk and pretends that he is the commander of one row of soldiers. He then fires a shot from one of his soldiers at the opposite row, drawing his chalk rapidly across the blackboard from one row

to the other to do this. The boys shoot in turn, and every time a shot (chalk-mark) crosses near the centre of one of the o's, that soldier is counted as killed, and he cannot fire again. The game ends when all the soldiers of one side have been shot—that is, crossed off by the chalk-marks. The lines must be drawn across very rapidly if the game is played fairly.—*The March Delineator*.

The Wind.

I am the wind,
And I come very fast;
Through the tall wood
I blow a loud blast.

Sometimes I am soft,
As a sweet, gentle child,
I play with the flowers,
Am quiet and mild.

And then out so loud
All at once I can roar,
If you wish to be quiet,
Close window and door.

I am the wind,
And I come very fast,
Through the tall wood
I blow a loud blast.

—Selected and Adapted.

Morning on the Farm.

(For Three Children).

When the white dove cooes to his crowsy mate,
And the birds in the trees rejoice,
Old Brahma stands on the barnyard gate
And shouts in a lusty voice:

"I feel better this mor-ning,"
And the Bantam thinks 'tis true,
For he answers back in a tenor tone:
"Without-a doubt-you do-o."

The housedog lies with his head on his paws;
And blinks at the morning call;
The cat with a field-mouse in her jaws
Comes running home on the wall;
While the Brahma heralds the morn again,
And the Bantam takes the cue:

"I feel better this morning,"
"Without-a doubt-you do-o."

The birds with a glorious burst of song
Make glad the orchard boughs;
And the farmer swinging his pails along,
Goes out to milk the cows;
The work of the day begins again,
And the Brahmas call anew:

"I feel better this morning,"
"Without-a doubt-you do-o."

—*Youth's Companion*.

Poems for March—Second Year.

Little Redbreast, come sing us your song;
The cold winter weather has lasted so long,
We're tired of skates and we're tired of sleds,
We're tired of snowbanks as high as our heads;
Now we're waiting for you,
Little Redbreast.

Soon as you sing, then the springtime will come,
The robins will call and the honey-bees hum,
And the dear little pussies, so cunning and gray,
Will sit in the willow tree over the way;
So hurry, please do,
Little Redbreast.

We're longing to hunt in the woods, for we know
Just where the spring beauties and liverwort grow;
We're sure they will peep when they hear your first song,
But why are you keeping us waiting so long,
All waiting for you,
Little Redbreast?

A Composition and a Conundrum.

The following composition and conundrum, taken from an exchange, was written by a nine-year-old girl. It shows how the powers of imagination and description may be enlisted in language work. She had in mind a road.

It is long and it is short.
It is smooth and it is rough.
Sometimes wide and sometimes narrow.
Sometimes hilly and sometimes level.
Sometimes wet and sometimes dry.
Sometimes hard and sometimes soft.
Sometimes straight and sometimes crooked.
It is used almost by every one.
What is it?

Juvenile Geography.

Here is a clever composition by a little traveller which shows quite a knowledge of things and places:

I was awakened one morning by a city in China, which was perched upon a fence under my window. From a neighbouring room I heard a division of Great Britain, and soon afterward I called one of the rivers in South America to make a fire, as the air was a division in South America. Going down to breakfast, I found that one of the lakes of North America had spilled a division of Europe upon the carpet, and put upon the table a division of Asia, seasoned with a city of South America; also a cape of Massachusetts; an island in Oceanica; a city in France, stopped with a city in Ireland, and a basket containing a river in Africa, and a quantity of ammunition. I gave him a division of Africa to pay for my breakfast, and went to the kitchen to ask some of the islands of Oceanica for some sugar to feed an island of Africa which was hanging in my window.

When My Grandmother Went to School.

When my grandmother went to school, she dressed in
brightest red,
From her scarlet shoes and stockings to the hood upon
her head.
Her frocks were made so long she tripped as she ran to
and fro;
But that was very, very, very, very long ago.

When my grandmother went to school, she sat upon a
bench;
She did not study drawing and she did not study French;
She learned to cipher, read and spell, work samplers,
knit and sew;
For that was very, very, very, very long ago.

When my grandmother went to school—so different then
from now!—
The girls they had to courtesy, the boys they had to bow;
And they had rewards of merit that they carried home to
show,
Oh, that was very, very, very, very long ago.

When my grandmother went to school, one word she
couldn't spell,
And so the darling had to stand—now don't you ever tell—
A whole hour in the fire-place! She told me, so I know,
But that was very, very, very, very long ago.

Where the Shine Came From.

"Well, grandma," said a little boy, resting his
elbow on the old lady's stuffed arm chair, "what
have you been doing here at the window all day by
yourself?"

"All I could," answered dear grandma, cheerily:
"I have read a little, and prayed a good deal, and
then looked out at the people. There's one little
girl, Arthur, that I have learned to watch. She has
sunny brown hair, her brown eyes have the same
sunny look in them, and I wonder every day what
makes her look so bright. Ah! here she comes now."

"That girl with the brown apron on?" Arthur
cried. "Why, I know that girl. That's Susie
Moore, and she has a dreadful hard time, grandma."

"Has she?" said grandma. "Wouldn't you give
anything to know where she gets all that brightness
from, then?"

"I'll ask her," said Arthur, promptly, and to
grandma's surprise he raised the window and called:
"Susie, O Susie, come up here a minute; grand-
ma wants to see you."

The brown eyes opened wide in surprise, but the
little maid turned at once and came in.

"Grandma wants to know, Susie Moore," ex-
plained the boy, "what makes you look so bright
all the time?"

"Why, I have to," said Susie. "You see, papa's
been ill a long while, and mamma is tired out with
nursing, and the baby's cross with her teeth, and if
I didn't be bright, who would be?"

"Yes, yes, I see," said dear old grandma, putting
her arm around this little streak of sunshine.
"That's God's reason for things; it is because
somebody needs it. Shine on, little sun; there
couldn't be a better reason for shining than because
it is dark at home."—*Exchange*.

The Little Chick's Lesson.

(For Five Little Girls).

Said the first little chicken
With a queer little squirm:
"Oh, I wish I could find
A fat little worm!"

Said the next little chicken,
With an odd little shrug:
"Oh, I wish I could find
A fat little bug!"

Said the third little chicken,
With a sharp little squeal:
"Oh, I wish I could find
Some nice yellow meal!"

Said the fourth little chicken,
With a small sigh of grief:
"Oh, I wish I could find
A little green leaf!"

Said the fifth little chicken,
With a faint little moan:
"Oh, I wish I could find
A wee gravel stone!"

(This verse in concert).

"Now, see here," said the mother,
From the green garden patch,
"If you want any breakfast,
You just come and scratch."

—*Baltimore World*.

Some teachers do not believe in making school
work interesting, and they have the boldness to
proclaim their opinion. I have never yet seen any
reasonable argument to favour an objection. If a
man's life work is not interesting to him, he is not
likely to make a success. Going to school is the
beginning of life's work. The more we can view
it in that light, the broader and more important
becomes the function of the teacher. So I say add
all the interest possible to every branch; let the
teacher develop all the enthusiasm within her reach;
and let her communicate as much of it as possible
to the children. Their success in this beginning
of life's work is the much more assured.—*F. H. S.,*
in Popular Educator.

CURRENT EVENTS.

The Sheikh-ul-Islam, the official head of the Mohammedans, whose decrees even the Sultan is bound to obey, has recently pointed out to his people that there is no verse in the Koran which calls the Christians infidels. It gives this name to fire worshippers; but towards the Christians, whom it calls Nazarenes, the Koran commands Mohammedans to cherish friendly relations. By this it appears that the dread of a general uprising of Mohammedans against Christians has no foundation. Instead of such a "holy war" being a religious duty with the followers of Islam, it is directly contrary to their religion.

The railway from Damascus to Mecca, for which the present Sultan receives the chief credit as being the originator of the movement for its erection, is built to enable faithful Moslems to perform their pilgrimage to the holy places in greater comfort, and not with any expectation of its ever yielding a profit. A stamp tax is to be levied to help pay its running expenses. It crosses the Jordan at a place eight hundred feet below sea level, by a branch line, and reaches the Mediterranean at Haifa. The main line keeps to the east of the Jordan, and soon reaches the desert regions, passing through most fascinating scenery, unlike any other in the world. The greater part of the country traversed is almost without water and without inhabitants; but the line will further the interests of the Sultan's religion and bind together the outlying portions of his empire.

A great earthquake in western Persia has destroyed many villages, with a loss of perhaps six thousand lives. It is thought to have been as violent as the earthquake in Italy, but the country was sparsely settled. The peasantry lost practically all their herds, their only wealth; and several villages are reported to have been completely swallowed up with all their inhabitants.

China now has railroads, projected or running, in every province except Kansu. The latest of these have been financed, constructed and run by the Chinese themselves, without any foreign assistance or advice. The telegraph extends to every province; and the postal service is now one of the best in the world. The dismissal of Yuan Shih-kai was a personal matter, now believed to be chiefly due to the fact that he was of the Chinese race and was considered a leader of the Chinese party, and was therefore unacceptable to the Manchu leaders who are in power. It does not follow that the appointment of a Manchu statesman in his place will bring a change of policy. The wonderful progress that China has been making in the last ten years cannot be stopped by any change of leadership.

Japan is feeling the effects of the destruction of small birds, the skins of which have been exported to America and other countries in great numbers. In view of the alarming increase of insect pests, the traffic is to be prohibited.

The province of Bongba, discovered last year by Dr. Sven Hedin, he describes as the richest and most important province in Tibet; yet before he penetrated its protecting mountain chains even China had no idea of its existence.

Wonderful stories are told of the riches of the newly found diamond fields of German Southwest Africa.

An interesting discovery of early Christian remains has recently been made on the Blue Nile. It is the first time that Christian remains have been met with so far south. Other discoveries of much interest to historians are reported from Egypt and the Soudan, and also from Asia Minor and the Arabian desert, where buried cities are being explored; and of scarcely less interest is the announcement that extensive ruins have been discovered in southern Peru.

As one of the features in the celebration of the three hundredth anniversary of the discovery of the Hudson river, there will be a reproduction of the "Half Moon," the vessel in which Henry Hudson sailed on his memorable voyage of discovery. The little vessel is to be constructed in Holland, and will probably be sent to New York in September next with a fleet of Dutch battleships as escort. The commissioners who have the preparations for this celebration in charge hope to make it equal, or excel, the celebration of last year at Quebec.

As an outcome of the collision between two ocean steamers off Nantucket, and the saving of so many lives by the use of the wireless telephone, the British parliament will be asked for legislation requiring British-owned steamers to carry a wireless equipment.

The seventh and largest of British warships of the "Dreadnought" class has recently been launched in Great Britain. Five more are to be laid down this year.

The Norwegian government has voted a subsidy to Captain Roald Amundsen for his proposed exploration of the North Polar Basin. This is not to be a spectacular effort to reach the Pole, but a scientific expedition for the fullest possible investigation of the Arctic seas. Captain Amundsen expects to start this year and be absent five or six years.

France and Germany have signed a far-reaching agreement concerning Morocco. The only apparent danger to the peace of Europe at present is the ill feeling between Austria and Servia, which still gives cause for alarm. The very pronounced ill feeling between our own people and the Germans seems to have been wholly allayed by King Edward's recent visit to Berlin, and his hearty reception by the populace in the German capital.

Newfoundland and the United States have agreed in respect to the submission of the fisheries dispute to the Hague court for arbitration. The international waterways treaty, however, in which Canada and the United States were mutually interested, has, for the present, been held up by the United States senate, which has declined to take action upon it until next session.

Grain from Alberta is to be shipped via Vancouver as being the most economical route. When the Hudson Bay route is opened up, in the somewhat distant future, this will probably be changed. Meanwhile there is a probability of the Georgian Bay route being made available by the building of the proposed ship canal.

A union of the British South African states under one government, somewhat similar to that of the Dominion of Canada, is near. A bill for this purpose will be submitted to the imperial parliament at its present session.

Practical Manual Training.

The Manual Training department of the REVIEW, under the direction of Mr. Peacock, is taking its place as a pleasing feature of the magazine, and to the manual training teachers of the provinces, must be a welcome addition to its columns.

In his last article, Mr. Peacock dealt with utility in manual training, which to my mind is the main feature of the whole method. Its utility as an educational subject has long been established and recognized in many countries, and to glance at the rapid development of it in the United States, where in some cities they are opening centres at the rate of five per school term, gives us an idea of the firm hold manual training has taken in the educational system of that country.

The practical utility of such manual work deserves much consideration; and just to the extent that the work of the school is made practical, to that extent only will the popularity and usefulness of the school tend in the large majority of instances.

At a recent meeting of the National Society for the Promotion of Industrial Education, Dr. Baillet said: "In manual training mere exercises should, as much as possible, be eliminated and projects made which appeal to the interests of the children. The teacher may be interested in the exercises involved in the project, the pupil is interested solely in the thing made."

These words appeal to me; and although in the Halifax schools we have as yet only one centre, and as a result the boy only receives but one year at the school, yet as far as possible we carry out the "project" idea. The first half term is usually devoted to a prescribed course of models, but after that scarcely any two boys of a class are working on like problems.

It does not take long for a boy to become interested in his work if he knows that the first few models are only a preliminary, and that later he will be allowed to make something that will either be useful for himself or his friends.

We find that the boys are perfectly willing and anxious to co-operate among themselves and construct some piece of furniture for their regular classrooms. This year we have followed this plan and made a number of drawing-model stands, small tables, test-tube racks, easels, etc. A number of boys are also working on smaller projects for themselves, such as small centre tables, book

cases and racks, serving trays, checker boards, complete drafting sets, etc.

In some classes we are doing some venetian iron work, a form of manual training, which I believe has not been taken up very much in this province at least. It offers exceptional advantages in original designing, and the working out of the designs is a good training. The boys take up the work with much enthusiasm.

May the Manual Training Department of the REVIEW prosper!

Halifax, N. S.

C. W. P.

An Examination 60 Years Ago.

In 1846 the following questions in arithmetic were given to a ninth grade class in the schools of Springfield, Mass. Of course you will try your seventh or eighth grade on them:

1. Add together the following numbers: Three thousand and nine, twenty-nine, one, three hundred one one, sixty-one, sixteen, seven hundred and two, nine thousand, nineteen and a half, one and a half.
2. Multiply 10008 by 8009.
3. In a town five miles wide and six miles long, how many acres?
4. How many steps of two and a half feet each will a person take in walking one mile?
5. What is one-third of $175\frac{1}{2}$?
6. A boy bought three dozen of oranges for $37\frac{1}{2}$ cents and sold them for $1\frac{1}{2}$ cents a piece; what would he have gained if he sold them for $2\frac{1}{2}$ cents a piece?
7. There is a certain number, one-third of which exceeds one-fourth of it by two; what is the number?
8. What is the simple interest of \$1200 for 12 years, 11 months and 29 days at six per cent?

These are very good questions to test a knowledge of the whole course in arithmetic of the common schools. In order to compare results (for Superintendent Balliet found also all of the examination papers of a class of 85 who took this test sixty years ago), Principal Riley, of Springfield, and Superintendent E. S. Monroe, of Frankfort, Ind., gave these questions to eighth grade pupils. We believe other teachers will like to make the comparison of the ability of their pupils under the same test also. The average of the class in 1846 was only 29.4 per cent; that of the class in Springfield in 1905 was 65.5, and of the Frankfort, Indiana, class 62.2.