THE TEACHER, THE SCHOOL AND THE COMMUNITY

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The Teacher, the School and the Community

W. P. 1

PREFACE

IN preparing the following pages the author has had in mind the three-fold object of modern education: the training of the physical, the mental, and the moral nature of the child. The environment of school life should be in harmony with his unfolding nature and growing abilities, and it should also be a source of constant pleasure to him.

The pupil who is absent from school should be conscious that he is missing something — not enjoying a reprieve. To this end, a variety of suggestions, helps, and recreations are offered to make the study of the common branches more interesting. The chapters on nature study, the country school as a public health educator, and what to do with agriculture and home science may be most welcome to the rural teachers who have been struggling with such problems. Effort has been made to unify the work of the school and the home, and special consideration has been given to the school as a community center and as the stimulating source for clear thinking, good farming, and right living.

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And he gave it for his opinion that whoever would make two ears of corn or two blades of grass to grow upon a spot of ground where only one grew before, would deserve better of mankind, and do more essential service to his country, than the whole race of politicians put together.—JONATHAN SWIFT.

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If angels ever visit our earth and hover unseen around the gatherings of mortals to survey their actions and contemplate their destiny as affected by human instrumentality, it seems to me there can be no spectacle so calculated to awaken their interest and enkindle their sympathy as when they see the young gathering together from their scattered homes to receive an impress for weal or woe, from the hand of him who has undertaken to guide them.

DAVID P. PAGE.

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CHAPTER I

BEGINNING THE SCHOOL YEAR

The first day of school is perhaps the most critical day of the year, for much depends upon a good beginning. Before opening a school, the wise teacher has clearly in mind a general plan of what she intends to accomplish. Perhaps in no other enterprise is a little forethought of so much advantage. Even an experienced teacher would be confused if suddenly placed, without plans, before half a hundred eager children awaiting occupation and direction. They have come full of interest in the prospects of the new school, and most of them are ready to engage cheerfully in whatever plans the teacher may have to propose; but they will soon be equally as ready to arrange and carry into effect their own plans of disorder and misrule, should they find that there is no definite system to be introduced.

Glance back upon your own school days. Do you not remember how eagerly you awaited the advent of the new teacher? How carefully you "sized her up," and then retired under some shady tree or behind the woodpile to discuss what you thought she would or would not do! Then when the bell summoned you into the schoolroom, how narrowly you watched for some sign of defect or

weakness! And at last, when you hastened home at night, there was not a child who had not a definite answer to his parents' question, "What do you think of your new teacher?" Children are good judges of human nature, and you know you were seldom mistaken in your first estimate. This recollection of your own experience as a pupil should lead you to spare no pains to make the first day in the schoolroom the most successful of the year.

A teacher was once engaged to teach in a country district several miles from her home. She was not acquainted in the neighborhood, and knew nothing of the reputation of the school until it was announced that she was to teach there. Then her friends and acquaintances began to tell her all sorts of stories, both true and false. They said that the children were ungovernable, that the last three teachers had actually been driven away, and many other things equally disconcerting. For a time she regretted taking the school; but she was not easily discouraged, and determined that she, at least, would not be defeated.

She spent a great deal of time and thought in preparing for the new work. She wished very much to call upon the patrons in her new field, but being unable to do so, she contented herself by going very early to the schoolroom on the first morning. She had previously visited the room, and had then called upon the president of the board, requesting him to make some repairs. He had cheerfully consented to do this, and so she found everything in excellent condition.

She busied herself for an hour in putting things about her desk in order, arranging books and the few pictures which she had brought, placing copy work upon the board,

and getting things ready for the pupils. She had taken the register and class records home with her after her first visit, and by careful study had been able to make a specimen program which she thought might serve temporarily. She had just finished writing this upon the board when a group of children entered.

For the next hour, she moved about among them, talking pleasantly, and by nine o'clock she felt that she had made some friends and created a feeling of good fellowship. At first her friendly advances were received very stiffly. Evidently the pupils were not used to being treated as companions, and they eyed her in surprise; but soon they were ready to meet her more than half way, and several times during the hour she overheard snatches of favorable comment.

Promptly at nine o'clock she rang the bell, and as soon as the pupils were seated, she called upon one of the older girls, who she had learned was organist for the church services held in the building every Sunday, to take the place at the organ. They sang "America," but the result was far from satisfactory, as not more than half a dozen voices joined in. Then the teacher addressed the children, saying that with their help she hoped to make that term of school highly successful. She pointed out to them her one rule which she had framed and hung above the blackboard behind the table. It was very short: "Do right." She then told them a good story, after which they sang a familiar working song.

The teacher had prepared busy work for each grade, and soon every pupil was provided with something to do. Then she moved quietly about, keeping a watchful eye over all,

taking the names, and arranging the classes for that session. As soon as any pupil showed signs of neglecting his work and getting into mischief, she promptly called at his seat and inspected his work. If it was well done, she praised his efforts and supplied him with other employment; if it was poorly done, she requested him firmly but kindly to try again. Supplied with the right kind of work before they had time to provide a wrong one, most of the pupils settled busily to work, and it was time for recess before they were aware of it. She avoided administering reproof in public, and so only the very few of the pupils she had reproved knew that she had whispered gentle reminders. In all cases, the hint was effectual. As she sat wearily in her chair at recess, she wondered if she would be able to maintain this strict watch until the necessity for it should no longer exist.

The session after recess was devoted to reading and history. As there were about thirty-six pupils studying reading, she could not possibly pronounce words for all; so she asked a bright young girl in the fifth grade to pronounce words for her in the four lower grades, adding that each pupil must make three copies of each word, thus preventing any fun over asking words. By having a helper passing about the room, she herself was able to give her entire attention to the classes and to maintain a general watch over all. The session passed fairly well. About 11:20 when the pupils were becoming restless, she had them lay aside their work and practice for a few minutes the first stanza of a lively motion song which she had written upon the board. Then she told them an interesting story, and all turned to their work again refreshed and eager.

In this way the first day and many other days passed. There were times when affairs did not glide so smoothly, but the rebellions were few and of short duration. At the close of a month, she had the satisfaction of hearing one of the older girls, the daughter of one of the directors, say to her: "I told pa when I went home the first day that we had got a teacher this time. We all agreed before you had been here half a day that we would have to come to time. Ben said before school that morning that he guessed we had got to the end of our rope, but I told him let's begin with all our old tricks and see what you would say. So we did, but we didn't try very long because we knew it wouldn't do any good: besides you're the only teacher we ever had who treated us as though it rested with us to make the school good. I thought that was the teacher's business."

Let us, then, begin the year's work with well-laid plans, and resolve to keep the pupils so busy that they will not have time to think of mischief. The following rules will be found of material help:

Make the schoolroom homelike and pleasant. Interest the children in the decorations, and in collecting specimens for the various cabinets and for the satisfying of their own curiosity.

Consider your scholars as reasonable and intelligent beings, and, in correcting faults, take such a course as will promote cheerfulness and a disposition to try to amend.

Reproof should be administered kindly and very seldom in public. Never manifest anger, but show firmness and decision. Be very slow to believe that a pupil has done wrong, and never compare one child with another.

If a child is indolent, exercise ingenuity to occupy him pleasantly in some useful employment, and then commend him for his industry.

Remember that a little "thank you" is not out of place in the schoolroom.

"Do right" is the only rule necessary to give the pupils. This allows the teacher the largest discretionary power. All children have a fairly well-defined sense of right and wrong. Don't worry pupils with one hundred little rules concerning the things they must or must not do.

Don't be hasty and impatient, or let little wrongs pass unnoticed.

Don't tell pupils to do a thing, and change your mind before they begin. They will never thoroughly understand you at this rate.

Determine to succeed, and be not easily discouraged.

Work away!
For the Master's eye is on us,
Never off us, still upon us,
Night and day.
Work away!
Keep the busy fingers plying,
Keep the ceaseless shuttles flying;
See that never thread be wrong;
Let not clash or clatter round us,
Sound of whirring wheels confound us;
Steady hand! let woof be strong
And firm, that has to last so long!
Work away!

CHAPTER II

SCHOOL GOVERNMENT

Order is heaven's first law, and it is scarcely more essential to the peace and harmony there, than it is to the happiness and success of a school. If, then, order is of so much importance, the ability to secure and maintain it must be one of the essential qualifications of a good teacher. Many fail in government; and this failure can usually be traced to some defect in the mental or moral culture of the teacher. Let us consider some requisites for good government.

"He that reigns within himself and rules passions, desires, and fears, is more than king."[1] The teacher who is not complete master of herself will certainly fail to master others. Often her patience will be most severely tried in school; in fact, she cannot expect the current of affairs to run smoothly for a single day. She should be prepared for this, and thus be able to master her temper; for nothing will weaken authority so much as an exhibition of anger. If she finds she cannot exercise this self-control, she should seek other employment, for she is certainly unfit to be entrusted with the training of children.

Having gained self-command, let the teacher next consider her manner. Some teachers are so frivolous with their pupils that they can never command with authority or gain respect. There are others who are constantly finding fault, scolding, and nagging. Such teachers cannot hope

[1] Henry Calderwood.

to gain the affection of their pupils; and without securing this, government will not be of the right kind. The teacher should endeavor to cultivate the true spirit of kindness and a desire to be useful. Courtesy as well as dignity is essential. "We must be as courteous to a child as to a picture; give it the advantage of the best light."[1]

Much depends on making the pupils feel that the rules and regulations are for their own good, and not to gratify the whims or caprices of the teacher. Most pupils really prefer order to disorder, and they do not respect the teacher who fails to maintain authority. One object of discipline is to secure a sufficient degree of order and quietness to enable the pupils to pursue their studies without interruption; but the higher aim is to train the will, and teach the pupils self-control. Cheerful obedience, respect for law and order, a hearty acquiescence in whatever is good for the entire number, are characteristics of a school which is well governed.

The management of the school requires both tact and skill on the part of the teacher. Tact, in gaining the necessary confidence and good will of the parents, involves a large amount of common sense; for parents do not always see their children's faults as the teacher does. The management must be firm and unvarying; there must be the same spirit and the same requirements every day of the term. If a teacher punishes to-day what she tolerates to-morrow, she cannot expect obedience. The teacher who said to her pupils: "I've got a bad headache, and you had better all look out to-day for I feel very cross," might better have dismissed her pupils until she felt able to teach

[1] Oliver Wendell Holmes.

them. Quite often the pupils have to suffer because the teacher has indigestion, or has been out late, or is feeling somewhat indisposed.

Always convince your pupils that you mean what you say; but if you punish them, by no means give them any chance to feel the undercurrent, "I'll show you that I mean to have my way."

Observe the strictest impartiality. Each child has a right to the best which the school affords in government as well as instruction. One cannot help liking a bright-faced, neatly-dressed little boy with clean hands and face better than an unmannerly urchin with black hands, grimy face, and uncombed hair. Yet, if a teacher wishes to succeed, she must be very careful not to show this preference. Each child has a soul, and the teacher is responsible to the Great Teacher for the way in which she attempts to mold it. Few teachers realize the importance of their work.

In almost every school there are pupils who are backward or dull, or who may have some physical defect. The teacher should be very careful in the treatment of such pupils. She should try to enter into the feelings of their parents; encourage rather than crush them. One teacher had in her schoolroom two children who could not speak plainly. Their talk was almost unintelligible. For this failing, which was a misfortune rather than a fault, the teacher punished them in various ways. She even resorted to whipping when other means failed. Such treatment not only failed to produce the desired effect, but made those children despise her and everything connected with school work. It also weakened her authority over the other pupils, and she therefore failed to govern the school.

Above all, a teacher must be a scholar, and if she is to be a teacher of real power, she must have wide and accurate scholarship. "It is the man who takes in who can give out. The man who does not do the one soon takes to spinning his own fancies out of his interior, like a spider, and he ensnares himself at last as well as his victims."[1]

The teacher should thoroughly know and understand what she expects to teach. She should go to her class so full of her subject that if she were deprived of the textbook she could conduct the recitation without difficulty. Imagine a teacher of geography trying to hear a recitation with a finger on the map, and as soon as she asks a question, starting out to find the answer. It seems ridiculous, but how often is this very thing seen in the schoolroom. Study diligently that you may be able to teach with enthusiasm and power; remember that *it is the master who makes the school.*

Having considered the five things that distinguish a good teacher — character, sympathy, firmness, common sense, and knowledge — let us discuss some methods of securing good order.

First of all, be careful of the early impressions that you make. Begin as you expect to hold out. Be natural; children are good readers of character and are quick to see through a mask of affectation. If you wish to win the love of children, you must first gain their respect. If you have been told before beginning a school that certain pupils are bad characters, that you must watch them or they will give you trouble, remember it if you must, but *don't let them find out that you suspect them.* Treat them the same as the other

[1] Dr. John Brown.

pupils; try to win their affection. In nine cases out of ten they will give you no trouble.

A teacher once taught a country school that had the reputation of being a "bad one." The director told her that if she could get along with two of the pupils, a boy and a girl, she would have no trouble, as those two controlled the school. The first morning came; she had no difficulty in recognizing the two. The girl, or young lady as she might have been called had her actions been ladylike, marched boldly into the schoolroom, removed hat, jacket, and rubbers, threw them on a seat, and then ordered one of the little girls to carry them into the hall. She kept three or four little girls busy waiting on her for some time. In response to the teacher's "Good morning," she gave a cool stare and an unintelligible mutter.

Nothing daunted, the teacher sat down by her, made some remarks about the pleasant weather, and then asked about the classes, the number of pupils in each, and the books that were used. At first the girl bristled like a porcupine, gave the briefest of answers, and watched the teacher narrowly; finally, as she was made to feel quite at ease, she answered more civilly. In a few minutes the teacher left her and went about some work, knowing all the time that her slightest movement was being watched and that once or twice some of the other pupils had been prompted to do something annoying. She felt a little relieved when she heard the girl say to the boy when he entered: "Bet a cooky, Jim, we've got a teacher that knows something this time."

A loud laugh was the answer of this overgrown boy of fifteen as he swaggered across the room.

"Mornin'," he called as he passed the teacher's desk.

"Good morning," returned the teacher, "I'm glad you have come. I was in need of some one to help move seats."

He gazed impudently at her with open mouth. She paid no attention to him, but pointed out the seats to be moved. He hesitated a minute and then went to work. She kept him busy for nearly a quarter of an hour and then thanked him for the way he had done the work. A short time after, through the open window, she heard him reply to a small boy: "She's a brick; and you'd better 'tend to lessons or you'll get your jacket tanned!"

For a month or more the teacher had to maintain a pretty close watch over these two, but after that they caused her no trouble and she could not have wished for better pupils. She had managed to win their affections and to create in them a desire for improvement. Under her careful guidance they fitted themselves for country school diplomas, and both entered a neighboring high school. Later the young man took the short course at his State University, and became one of the most practical, up-to-date young farmers of his section. The girl was graduated from a business college and is to-day a successful business woman.

The pleasure which comes from well-doing because it is right should be constantly in the mind of the pupil. Teachers should always encourage truthfulness. There is a conventional sense of honor among schoolboys which binds them not to inform the teacher of the misdeeds of their mates. The wise teacher uses tact in modifying the school code so as to draw a line of distinction between minor matters that belong to the tattling order, and the graver offenses that concern the welfare of the school.

Among the many enemies of good order may be mentioned whispering, idleness, litter on desks and floor, class interruptions, unnecessary questioning, general confusion in studying and in moving about the room. Since the organization of the first school, teachers have, at times, found difficulty in settling these questions. Here are some devices that have been tried and proved successful.

1. *Deportment.* If you are teaching in the lower grades, and wish to abolish that "whispering bugbear," draw along the top of the blackboard a five-pointed star for each pupil. Each point represents a school day. At the close of each day, call the roll; if any one is imperfect, color the point in his star that represents that day. The pupils, having a natural desire to appear well in each other's eyes, will strive earnestly to keep their stars bright. Should there be a pupil who does not care for public opinion, who allows all the points of his star to become colored, he must be punished in some way.

In advanced grades, the following plan has been very successful. Watch any pupil who idles away his time, and enter the number of minutes which he loses opposite his name in the class book. When the minutes amount to ten, require him to make up the time at recess. Assign a sufficiently hard task so that he will not care to repeat it.

2. *For idleness*, a very simple remedy usually effects a cure. If a child will not work in school time, let him understand that he must work while the others play. Do not merely require him to keep his seat; see that he uses his time properly. Of course, there are extreme cases which cannot be reached by this plan.

The "star" plan has also been successfully tried for the prevention of idleness. For example, suppose that the pupils of the first grade are endeavoring to read as perfectly as possible. Each pupil should have a five-pointed star. Every mistake makes a cross in the point for that day. Five crosses destroy a point, and it must be erased. Instead of allowing pupils to ask to have unknown words pronounced, have each pass to the board and write the word under his star. As soon as the class is called, pronounce the words and drill upon them for a few minutes. For a part of the next lesson, each pupil must be required to spell the words written under his star. At the end of the week, the pupils who have whole stars should be allowed some favor. It is a good plan to allow them to have a "play afternoon" Friday. They should be excused from regular lessons, and be permitted to do paper cutting, weaving, drawing, and similar recreations.

The following is a simple device which will be of interest to small pupils. Draw a beehive upon the board. Have a talk with the pupils about bees, dwelling at some length upon the workers and the drones. Then suggest that they pretend the schoolroom is a hive. Tell them that they may be the workers and drones, and that you will be the queen and direct their work. Then tell them that you will write the names of the drones in the lower part of the hive, while the busiest bees will have their names at the top. This will create much interest and the children will work hard to get their names at the top of the hive.

3. *For neatness.* In the primary grades, it is a good plan to draw a dustpan upon the board. Tell the children that it is for the pupils who do not keep their desks and the floor

near them neat and clean. Then, if any one leaves his desk in confusion, or scatters paper on the floor, or brings in mud, put his name in the dustpan. In the advanced grades, a few general talks on neatness, and a private personal reminder to those in need, will usually be effectual. It should always be understood that if any one makes unnecessary litter about his desk, he must sweep it up. Teachers are often inclined to neglect these things, especially if they do not have to do the janitor work. This ought not to be; nothing spoils the appearance of a room so much as a litter of dust, pencil scrapings, and torn papers. The principles of good housekeeping are just as necessary in the schoolroom as in the home.

4. *Interruptions.* Pupils should be allowed the largest liberty possible without infringing on the rights of others. It is not necessary for pupils to request permission to drink, to leave the room, or to attend to other schoolroom duties. They should have perfect freedom so long as they respect their privilege. Abuse of any privilege should always be followed by privation. Pupils should be expected to attend to such things after the five minute bell at recess rings. They will willingly do this if they are requested and encouraged to do so. If pupils are troublesome about leaving the room, require them to register their names on the blackboard and in some cases to make up two or three minutes at recess.

Teachers should not allow pupils to interrupt during class periods. In the lower grades, where it is hard for pupils to study without more or less assistance, it is a good plan to appoint one of the older pupils as helper for a session. The helper should pass quietly about the room giving such

assistance as is necessary. Of course this helper should not be expected to help those in the same grade. The helper should always be chosen from the pupils who have had the best lessons, or who have been the highest in deportment. Pupils will think this quite a privilege, and will put forth a good deal of effort to become a helper.

5. *Avoiding confusion.* Whenever possible, the pupils should be seated in grades so that it will not be necessary for them to change their places to recite. If the class is seated, when a pupil is called upon to recite he should stand. This develops self-confidence and more fully attracts the attention of the class. It is a good plan to have plenty of written work in connection with the recitation, allowing a part or all of the pupils to recite from the blackboard.

There are so many ways of conducting a recitation and presenting the different subjects that it would be impossible to make more than a passing mention of them. No live teacher need fail frequently to surprise her class with a new method of conducting a recitation. Many boarding-house keepers through lack of originality fail to please their patrons. They prepare the same thing in the same way day after day; and no matter how palatable a dish may be, one grows tired of seeing it too often. The same is equally true in teaching; teachers must vary their plan of doing things. Children will soon become tired of a teacher who has one and only one way of going at things. When students complain that they do not like to go to school, it is usually quite certain that their teacher lacks originality and the skill to arouse a lively interest in them. Aim to keep them awake and on the lookout. The arrangement

and length of recitations are matters of judgment to be modified according to conditions. When one class is reciting, be sure that the others have something to do and that they do it. If the school is a large one, do not attempt to hear daily recitations in everything, but alternate the studies of the more advanced pupils. Economize time and instruction by means of as many general exercises as possible, in which all except the youngest pupils can join; such as drill exercises in the fundamental operations, mental arithmetic exercises, the spelling of common words, short compositions, minute speeches, review questions on the leading facts of geography and history.

Chief of the teacher's mottoes should be, "A time for everything, and everything in its time." Teaching under such circumstances becomes a delightful employment.

CHAPTER III

SCHOOL PUNISHMENTS

"Punishment is pain inflicted upon the mind or body of an individual by the authority to which he is subject, with a view either to reform him, or to deter others from the commission of offenses, or both."[1] It is necessary for the inflicter of punishment to have one of these worthy objects in view. Punishment for the sake of retaliation is not punishment; it is revenge.

Punishments may be divided into two classes: those which address themselves directly to the mind, as privation from privileges and loss of liberty, and those which address the mind through the body, as requiring the pupil to take some painful attitude, inflicting bodily chastisement, and the like.

With the above classification in mind, let us first consider some of the improper modes of punishment. There are some punishments which are always wrong; such as pulling the ears, striking the pupil over the head, or pulling the hair. A pupil must love his teacher very much to be able to control his temper at such insults. Possibly in one case in a hundred such treatment might induce the pupil to reform, but in the other ninety-nine the seeds of rank rebellion would be sown. The very mode of punishment leads the pupil, not to consider that he has interfered with the best interests of others, but to dwell upon the insult

[1] David P. Page.

offered to his person, and creates in him a desire to get even with that teacher. Then, there are those old-time punishments, which, as we rarely see them now, deserve only a passing thought, such as holding a nail in the floor, sitting on nothing, or holding a heavy book at arm's length. Such punishments could never produce good results. The pupil might submit, and he might abstain from similar offenses, but it would be the submission of self-preservation, not of penitence.

Ridicule is another weapon that should never be used. It often causes more pain than he who uses it imagines; especially if some physical defect or mental incapacity is used as the subject. It is the modest, conscientious child that is most affected. Indolent and vicious children are usually hardened by ridicule. Another strong objection is the feeling it induces between pupil and teacher. The teacher, conscious that he has injured the child, will find it hard to love him; while the child loses his confidence in the teacher, who should be his best friend in the school. The strongest objection of all to the use of ridicule is the feeling it calls forth in the school. Those who participate in the laugh thus excited are under the influence of no very amiable motives. And, where this is carried so far as to allow the schoolmates of the pupil to hiss and point their fingers in scorn, the most deplorable spirit of self-righteousness is cultivated.

The entire school should never be punished for the faults of a few. To deprive the room of the recess or to detain everyone after school is never wise. If a fault has been committed and you are not sharp enough to single out the culprits, let it pass with as little notice as possible.

Another very familiar mode of punishment, and perhaps the worst of all, is the continual nagging, faultfinding, threatening, and scolding in which some teachers are prone to indulge. There is a physiological law that the exercise of any organ will give it greater development. It follows then, that those who once begin to scold are fortunate if they stop short of high attainment in the art. Usually, too, the more a child is scolded the harder his heart becomes. A blacksmith who had been accustomed to scold his family, was one day attempting to harden a piece of steel; but failing after two or three attempts, his son who had been watching him exclaimed, "Scold it, father, scold it; if that won't harden it, nothing else will!" The ability to control the "unruly member" is a virtue which every teacher should cultivate.

Every teacher's mind should be settled as to what punishments are proper, so that, when they are administered, it can be done with an honest conviction of the performance of duty. Among proper punishments, the following may be mentioned:

1. *Kind reproof administered in private.* There is an objection to reproving the pupil publicly, on the ground that the pupil's natural spirit of obstinacy will rise to resist this show of authority. Many a bad boy or girl has been reformed by a kind talk from the teacher in private, for such talks are rarely forgotten.

2. *Loss of privileges.* If a pupil abuses his privileges it is certainly right to deprive him of them. Thus, if a pupil will not work in school hours, it is only fair that he be required to complete his task while others are at play. If he is boisterous and rude, interfering with the pleasures

of others at recess, he should be required to take his recess alone.

3. *Let the punishment be a continuation of the offense.* This is sometimes the best punishment of all. The pupil cannot possibly complain that he is not judged fairly. For instance, if a child forgets to keep his seat, and stands beside his desk, or gets upon his knees or lies down, as many children do, require him to maintain that position long enough to impress his fault clearly upon his mind. A boy who had the bad habit of playing mumble-peg on the floor behind his seat whenever the teacher's back was turned, was completely cured by being required to play the whole of one session in plain view of his schoolmates.

Another boy seemed to take delight in torturing others. One day his teacher saw him stick the boy in front of him with a pin. The boy moved away from him, and went on with his lessons. But his tormentor followed him and again applied the pin. The teacher finished the recitation, quietly dismissed the class, and then asked the culprit to come to her desk. He came rather shamefaced; he did not know the teacher had seen him.

"Charlie," she said, in a low voice, "did I not see you sticking John with a pin?"

"Yes'm," said Charlie.

"What did you do it for?"

"For fun," answered Charlie.

"I did not know that was fun," said the teacher. "Let us see!" Taking a needle from a sewing card on the desk, she pricked him on the arm once or twice.

"Oh!" exclaimed Charlie, shrinking back.

"It is fun, isn't it?" said the teacher, again applying the needle.

"Oh, Miss Harvey, don't!" said Charlie.

"Very well, Charlie; but don't you think it *is* fun?" said Miss Harvey, putting down the needle. Then she proceeded to talk quietly to him. In a few minutes he burst into tears. No one ever saw him torturing another after that.

This plan is applicable in many ways; for, if a child can be brought to tears from grief at his own conduct, and not from fear of punishment, he needs no chastisement.

4. *Requiring the pupil to confess his faults publicly* and request the forgiveness of the one wronged. Great care should be exercised in the use of this punishment, as it may be the means of cultivating hypocrisy or inducing open rebellion. As an illustration: A little boy had broken some of his cousin's toys.

"Paul, tell Nellie you are sorry," his mother commanded.

Paul stoutly resisted.

"If you do not I shall whip you," said his mother.

"Well, Nellie, I'm sorry," snapped Paul, and then aside, "Don't care; I ain't sorry either."

5. *Corporal punishment.* Advocating the use of the rod under any circumstances will undoubtedly raise a storm of objections, yet when all other means have failed Solomon's sentiments can be heartily endorsed. The teacher should be particularly careful not to whip a child unless she is certain she can control her own temper; and then, she should be careful to use a proper instrument, and a proper mode of infliction; and, having considerately undertaken the case, it should be so thorough as not to need repetition.

If the pupil is at fault the first thing to be done is to study the case. In school government, as in the practice of medicine, too much cannot be said about a proper diagnosis, lest the wrong remedies be applied. The teacher should determine whether encouragement, assistance, kind reproof, sharp correction, or corporal punishment is needed; and in any case, whether the remedy would be best administered publicly or privately.

Quarles's advice to parents is applicable to teachers as well: "Be very vigilant over the child in the April of his understanding, lest the frost of May nip his blossoms. While he is a tender twig, straighten him; while he is a new vessel, season him; such as thou makest him, such commonly shalt thou find him. Let his first lesson be obedience, and his second shall be what thou wilt."

CHAPTER IV

BEAUTIFYING THE SCHOOLROOM

All the surroundings of childhood should be bright and attractive. Yet, how often is this neglected or wholly disregarded! It is not a difficult task to brighten up a dingy room, if the teacher is willing to expend a little tact, energy and labor.

A young girl contracted to teach a country school in Township Ten. As it was her first term, she did not think to visit her schoolroom before the first day of school. She went to her schoolhouse alone, humming snatches of song all the way: she was very happy for she was about to begin the first chapter in her dream of dreams. Her plans were all made and she was anticipating a pleasant day; but when she slipped the key in the lock and pushed open the door, her dream faded and the song died from her lips.

The sight which met her eyes unnerved her. The room reeked with foul air; everything was covered with dust and dirt. The floor was strewn with dead flies, bits of paper, and moldy slate rags. The walls and curtainless windows were festooned with cobwebs; the blackboards were a dingy gray; and the chalk trays looked as though they had never been emptied.

Only for a few moments was the new teacher dismayed. She hastily placed her books and parcels under a tree, knotted her handkerchief over her hair, pinned up her dress, and stepped briskly into the room. She found a

comparatively new broom hanging up in the corner. In a few minutes she had freed the windows of cobwebs and opened them wide to let in the bright sunshine and the pure air. After brushing the flies and cobwebs from the ceiling and walls, she turned her attention to the blackboards. The chalk trays were emptied; the blackboards were made to look as clean as possible, and the erasers were piled outside the door to await the coming of some small boy. Then she disposed of the heterogeneous mass of rubbish that had collected about the teacher's desk, and swept the floor carefully.

Fortunately, she had come to the schoolhouse early, and there was still an hour before school time. Her boarding house was only a short distance away, and she returned to get some wash cloths and a pail of water. The young daughter of the house returned with her, and together they dusted the furniture, washed the blackboards, and had just begun to wash the windows when a bevy of pupils entered. They stared in open-mouthed surprise at the transformation of the room, and the occupation of the teacher. She greeted them pleasantly, and remarked that she thought it necessary to clean the windows as they would want light on the subjects they were to study. The house-cleaning spirit was contagious and in a few minutes all the pupils were busy. They had no school that morning, but at noon the room was as clean as soap and water could make it. They spent their nooning under a big tree while the floor dried.

The afternoon passed all too soon. United by the bond of common interest and comradeship, the children were ready to enter into the school work with as much zest as

they had into the house cleaning. After the day's work had been finished, the teacher, tired as she was, walked two miles to the home of the school trustee, and succeeded in persuading him that it was his duty to get new shades for the windows, some towels, a water pail, a dipper, and a dust-pan. It is not necessary to tell how that teacher and pupils raised money to buy sash and blackboard curtains, or to pay for having the floor scrubbed once a week; neither shall we enter into details as to how they decorated their schoolroom, founded a library, and purchased several pieces of school apparatus.

Every teacher should plan these things for herself; however, we would not advise all teachers to begin the first morning by cleaning house. We would advise, though, that they visit the schoolroom at least a week before the beginning of the term, make a note of what is needed, and visit the trustee to learn his intentions. If he does not know what his duties are, the teacher should tactfully explain, and he will usually be found willing to do his part. If for any reason the teacher is thrown on her own resources, she will do well to emulate the young girl mentioned; for order and neatness are the first requisites of comfort and cheerfulness in the schoolroom.

The successful teacher who said she made her school interesting by trying to make it *homelike*, certainly struck the keynote. Memory recalls to us a white schoolhouse on the hill, where the teacher tried to make everything homelike. She even had a pretty table-spread on her table, and a large braided rug in front of it. There were several good pictures, and a rocking-chair for company; and we children were encouraged to bring articles that would be

useful or ornamental in the room. We enjoyed every day of school, and dearly loved our teacher. But we were not permitted to keep her, for the school board in a neighboring city recognized her worth and offered her a much better salary than our district could afford to pay.

Teachers and pupils may decorate their rooms handsomely with very little expense. Fresh or pressed flowers, festoons of pine, fringes of grasses strung by knotting upon cord, banks of ferns, trophies of cat-tails and rushes, wreaths, and similar natural growth make beautiful and inexpensive adornments. Flags and bunting make appropriate decorations. Paper chains, bows of tissue paper embodying the school colors, pine cones, tinsel and the like, may all be used effectively. Very good pictures may now be purchased at little cost. It is a good plan to paste them on strips of manila paper and tack the strips around the room just above the blackboard. Inexpensive frames may be made for small pictures from colored cardboard, pasteboard covered with tin-foil, acorns, or similar materials near at hand. Pretty rustic frames may be made of twigs.

Every school should contain a cabinet for holding collections of woods, leaves, or minerals. It is not necessary to have an expensive cabinet. Pasteboard or wooden boxes will do very well, and almost any handy school boy will enjoy making a rack or frame for them. They should be arranged in tiers one above another, and each should be plainly and properly labeled. The pupils should be encouraged to add to the collection. Often they will have friends from afar who will send valuable specimens for the school collection.

Portfolio plant collections may be made very interesting. The sheets for the portfolio should be of the standard size adopted for the American herbarium (11½ by 16½ inches), and the pressing and drying of the flowers should be carefully done. Directions for the pressing, mounting, and labeling of specimens may be found in most textbooks on botany. Growing plants in pots or boxes will be found useful for study as well as for adding attractiveness to the schoolroom. A bracket-shelf extension of a window ledge will serve to accommodate these, where they may receive the needed air and sunshine, though a movable plant stand is preferable. It is a good plan to have as many varieties as possible, and to grow plants from cuttings and from bulbs. Some seeds should be planted to illustrate the process of sprouting. It is astonishing how many grown people are ignorant of the simplest forms of plant life.

Entomological collections are valuable acquisitions to any school. Something of the nature and habits of insects, and the purposes which they serve in the economy of nature, will constitute profitable lessons for young people. Common beetles (pinching bugs), Colorado beetles (potato bugs), dragon flies, bees, wasps, and other common insects are valuable for such collections. Insects for preservation are generally mounted upon long pins stuck in the bottom of very shallow boxes or cases. The cases should have glass covers to exclude the dust.[1]

Another source of interest and profit in the schoolroom is an aquarium, as it affords such a good opportunity to study the various forms of animal and plant life. Small

[1] See the chapter on Agriculture.

aquariums of iron and glass are not expensive, and will repay their cost in the pleasure which they afford. There should be no difficulty in filling them, as pupils will vie with each other in providing fishes, turtles, polliwogs, and pebbles. It is probable that the supply would always be greater than the demand.

A general discussion of school furnishing and equipment would be impossible here. It lies within the power of every energetic teacher to procure many things that the board will not buy. By keeping in mind the needs of the schoolroom, she will find many opportunities to add to its treasures. The additions each year may be small, but they will all count in the end, and form a part of that large whole by which the pupils are taught refinement of body and soul, without which education is but an incomplete and unsatisfactory acquirement.

CHAPTER V

AWAKENING INTEREST IN SCHOOL

Every earnest teacher understands that, if she would excite profitable interest in her school, she must teach many things besides the subjects in the textbooks. She must "light up the magic lantern of common things." It is necessary to wake up the minds of the children and teach them to observe things about them; for this is the basis of all knowledge. Thousands of people having eyes to see, see not; having ears to hear, hear not. They lose half the wealth of the world from lack of power to perceive. It is therefore important that habits of exact observation be formed early in life. In order that the teacher should know best how to proceed, she needs to observe, read, and think. She needs to sit at the feet of Jesus, of Aristotle, of Socrates, and of Pestalozzi, and to learn methods from the masters.

David P. Page, in his *Theory and Practice of Teaching*, tells how it is possible for an ear of corn to wake up the minds in a school district. In the physical world, the earth, rocks, trees, flowers, fruits, beasts, birds, fishes, and other objects furnish an inexhaustible supply of illustrative material suitable for any grade. Let the teacher determine what class of subjects she will dwell upon, and she can easily select her text. For instance, a piece of steel, a lump of coal, or a piece of paper could be made the text for adroitly bringing in the uses of metals, the

uses of coal and the story of its formation, the material from which paper is made, early writing materials, and so on.

It is a good plan to have a certain time for general exercises every day, when the pupils may be required to lay aside their ordinary work and give undivided attention to the subject to be discussed. In every case the teacher must make thorough preparation for the exercise. It will not do to trust to chance or the inspiration of the moment. She must have a well-defined idea of what she intends to accomplish, and endeavor to make at least one point clear at each lesson, and fix it firmly in the minds of the children. Meaningless talk which has no objective end is a waste of the pupils' time. The teacher should always begin with some subject familiar to the pupils. Then by careful questioning, she should lead them to impart all the information they can, and create within them a thirst for more knowledge. If the teacher has the proper tact, she can keep the children constantly inquiring and observing. This is of immense advantage, for it keeps the minds of the children in a state of vigorous activity. They are incited to discover and ascertain for themselves; and, being thus profitably employed both in and out of school, they are more easily governed.

These general exercises afford an excellent medium for awakening the parents' interest in school. As the teacher's questions grow too difficult for the pupils to answer readily, they will naturally inquire at home. The parents soon become interested, and are often as eager as the children to hear the next question. Very often they recognize that they are growing rusty, and begin a course of reading and

study so as to be able to help answer the teacher's questions. Soon the interest in the school spreads over the neighborhood; parents confer with each other, and visit the school to see what the pupils are doing. This secures parental coöperation, and the success of the school is assured. Another important fact is that it arouses the teacher's own mind. Teachers are too apt to be satisfied with the attainments which they had at the start, and soon fall behind the procession.

In carrying out the plan of supplementary studies as here suggested, the teacher must be careful not to make it a hobby to the neglect of regular studies. The period to be set apart for these exercises should probably never exceed ten minutes. It ought to come at some time when the pupils need rest, probably in the last hour of the daily session. An exercise should always close when the interest is at its height — leave the pupils "longing not loathing." To be entirely successful, the teacher must refuse to hold any conversation regarding the subject until time for the next exercise. She must avoid all tendency to lecture, and she should ask such questions as the pupils may answer by thought, observation, and study. Above all, she must be very careful not to speak lightly of the opinions of parents, or she may create a neighborhood row instead of school interests.

A certain teacher once contracted to teach the winter term in a district school. Among his pupils were a number of young men and women who had little inclination to study, and who attended school merely to have a good time. The teacher realized that unless he could awaken the pupils' interest in school the term would be a failure.

He was a good historian and well versed in literature, and he determined to make this knowledge serve as the means for awakening the school and the community.

The history class was just beginning the study of the Civil War. One afternoon the teacher requested the pupils to lay aside their work for five minutes, as he had something to show them. Then he produced a large picture of Lincoln which he hung above the blackboard, and, drawing aside the curtain which covered the small blackboard behind his table, he revealed a drawing of the log cabin where Lincoln was born. The boy was seated on the doorstone playing with his dog, while near by his mother was washing. After a little talk about the pictures, he questioned the pupils to find out how much they already knew about Lincoln. When the time had expired, he asked each one to find out all about Lincoln's life, and said that, at the same time the next day, he would listen for five minutes to what they had to tell him.

When the appointed time came, most of the pupils were wide awake and interested. They did not have time to tell all they knew in the five minutes, and the subject was continued the following day. From the many times that "Pa" and "Grandpa" were quoted, the teacher felt satisfied that a start had been made toward securing the interest of the patrons. The general exercises were continued; after the subject of Lincoln had been exhausted, the lives of other noted men were studied and various topics relating to the times were discussed. The history classes studied the general and immediate causes of the war; and their interest was stimulated by the course of

reference reading marked out for them by their energetic teacher. In geography, they studied about the places and points of interest which their history mentioned, and were thus led to see the relation their studies had to each other. The younger pupils were not forgotten. In language work and supplementary reading they were kept in touch with the older ones; while the little tots listened to the teacher's wonderful stories, drew pictures of log houses, and talked about Abraham Lincoln. After a time, the history class began the study of the war, and one memorable day they learned of the Mason and Slidell affair, and the teacher read the selection "Jonathan to John," from the *Biglow Papers*, by James Russell Lowell. The following stanzas were received with ringing cheers:

We own the ocean tu, John:
You mus'n' take it hard,
Ef we can't think with you, John,
It's jest your own back yard.
Ole Uncle S. sez he, "I guess,
Ef *thet's* his claim," sez he,
"The fencin' stuff'll cost enough
To bust up friend J. B.,
Ez wal ez you an' me!"

Why talk so dreffle big, John,
Of honor, when it meant
You didn't care a fig, John,
But jest for *ten per cent*?
Ole Uncle S. sez he, "I guess
He's like the rest," sez he:
"When all is done, it's number one
Thet's nearest to J. B.,
Ez wal ez t'you an' me!"

We give the critters back, John,
Cos Abram thought 'twas right;
It warn't your bullyin' clack, John,
Provokin' us to fight.
Ole Uncle S. sez he, "I guess
We've a hard row," sez he,
"To hoe just now; but thet, somehow,
May happen to J. B.,
Ez wal ez you an' me."

Whenever it was possible, the teacher read selections from good literature to interest and enliven the class. Among these selections were "Sheridan's Ride," "Barbara Frietchie," "The Picket Guard," "Calling the Roll," "Stars in My Country's Sky," "Now or Never," "My Maryland," "Dixie." Many of the selections were committed to memory by the pupils. On the evening of February 12, the anniversary of Lincoln's birth, the school gave a patriotic entertainment which was attended en masse, not only by the people of the neighborhood, but by the people of the surrounding towns. The teacher was so far successful in his efforts to awaken interest that he was re-employed at a considerable advance, and in the following fall he was invited to accept the principalship of the high school in a neighboring city.

I have dwelt at some length on the plans and successes of this teacher, because what he accomplished may be achieved by any teacher who will exercise untiring energy and skill. Edward Thring, the prince of English schoolmasters, says that a teacher is a combination of heart, head, artistic training, and favoring circumstances. Happy is that teacher who acts the Columbus to his school and to the community in which he lives.

There is a saying that "Any fool can pour knowledge into the head of a clever boy; but it needs a skilled workman to be able to teach." Teachers ought always to strive to draw out the child's interest and fix it upon worthy objects which will abide and be of value after school days have passed away.

CHAPTER VI

CONDUCTING RECITATIONS

The success of every school depends upon the teacher's ability to excite an interest in the recitations. The ability to *tell well* what she knows is a necessary requisite of every good teacher. In order to do this, she must thoroughly understand what she attempts to teach. We have said that every teacher should go to a class so full of her subject that, were the textbook destroyed, she could make another and a better one. If she couples enthusiasm and interest with this knowledge such a teacher cannot fail to secure attention.

Children are naturally imitative beings, and they soon catch the manners of the teacher. If she is dull, slow, and absent-minded, with no interest in the lesson, the children will soon become stupid and inattentive. On the other hand, if all her looks and actions indicate that the subject is of importance, she will gain their attention. Enter one school and you may see the dull teacher attempting to hear a recitation. She is chained to the textbook. After reading one of the printed questions at the end of the lesson, her eye sets out on a chase after the answer in the text. If the pupil happens to answer correctly, but not in the textbook language, the teacher immediately reads as much of the text as answers that particular question. Under such teaching the pupils soon grow dull and indifferent, or are driven by the activity of their own natures to some expedient to interest themselves.

Pass to another school. A breathless interest prevails; the teacher's glowing confidence and sparkling eyes betray her enthusiasm. Not being confined to the textbook, she has the use of her eyes, and is able to give, at the right moment, just the help which the pupil needs. Her ready questions and intelligent explanations enliven the class, and they are fired with a desire to become her equal in knowledge.

The teacher should never come to the *end* of her resources. It is a credit when it can be said of her that she studies the lessons which she expects to hear the pupils recite. Bear in mind, however, that the pupil studies with a view of *reciting the lesson;* the teacher with a view of *conducting the recitation.* It is one thing to run over the lesson just before the class is called with a view of knowing what is in it; it is a very different thing to study it with the view of ascertaining what points will need explanation and elucidation; in what respects supplemental information may be given, errors corrected, and principles restated. It does not take much of a teacher to *hear* the lesson. But to enliven the lesson, to illuminate the chief points, to fasten it in the mind of the child, and to awaken within him a desire to know more, is the real criterion of a good teacher.

Aside from the teacher's preparation, there are many minor details which need attention if the recitation is to be successful. For instance, if the seats are uncomfortable, if the room is too hot or too cold, or if the air is bad from imperfect ventilation, the pupils cannot give their best attention. The place in the room which the class is to occupy should be carefully selected. It must be where the teacher can command the eye of every one in the class, and

yet it must not obstruct the view which she should have of the school. The best plan is to seat the school in grades. The teacher can then go to her class. By so doing, she saves time and avoids the slight disturbance that is inevitable when the class is called out to "take position."

The best instructors divide the time of the recitation into three equal parts: a review of yesterday's lesson, a drill on the subject in hand, and preparation and direction for the next day's work. The art of questioning plays an important part. The object of the question should be (1) to stimulate thought; (2) to provoke curiosity; (3) to awaken a spirit of inquiry; (4) to cultivate and quicken the imagination; (5) to aid the pupils in forming good habits of study. "Questioning is not telling, neither is it teaching, except as it is made to lead the pupil to express himself." Neither pupils nor teacher should do all the reciting. The teacher should illustrate and explain; the pupil should reproduce the truths of the lesson in his own language and learn to apply them.

The manner of questioning has much to do with attention. If the pupils are called on in any stated order, or if the name of the pupil is called before the question is asked, the responsibility for continued attention is removed. The best plan is to state the question plainly to the class, and then to call on some pupil to answer it. Experienced teachers have developed special plans for teaching each subject; and there are countless ways to make each lesson interesting. Only a few of these successful methods can be given here.

Avoid formal routine. Children are apt to think that they *study* in order to *recite*. They fail to understand the

effects of knowledge upon their lives. As early as possible, they should be taught that books are but helps. All lessons should be made as practical as possible. When pupils realize that these are to be of assistance to them in their future lives, they have a new motive for study.

The teacher should be careful to use language which is intelligible to the children. For instance:

"How many are four and two, James?" says the teacher.

The answer comes promptly: "Four and two are six."

"Johnny," says the teacher, "proceed to the board and demonstrate to the class that four and two are six."

Johnny hesitates, looks confused, wiggles in his seat, and sucks his chubby thumb.

The teacher frowns. "Johnny," she says sharply, "Proceed at once to do as I bade you."

Johnny still hesitates, gets red in the face, and sucks his thumb harder.

"Johnny!" and Miss Blank rises threateningly.

"If you please, Miss Blank," interrupts the big sister in the back of the room, "Johnny doesn't mean to disobey. He doesn't understand what you mean. Johnny, the teacher means for you to go to the board and show the class how to add four and two."

Johnny looks happy again, rises proudly and proceeds.

Often when teachers are asked to explain a thought or principle, they do so in language more confusing than the principle itself. Frequently this is done to cover up the teacher's ignorance. This does not long deceive the pupil; it is much better for the teacher to confess frankly inability

to explain the point in question. At the earliest opportunity, she should acquire the necessary knowledge, and then explain carefully.

Always give the laggards and dullards a chance. They need more help than the bright pupils. Many teachers are tempted to call upon the brighter pupils, especially if visitors are in. The bright little boy with his ready tongue may give the idea that he knows it all and more too, but often, if the shy, timid little girl is skillfully questioned, she may be found to have by far the best understanding of the lesson.

A good recitation is the real test of the school. It shows, as in a mirror, the interest, skill, and information of the teacher, and is an accurate measure of the work done by the pupils. And the vital element is the teacher. The effects of the recitation are far-reaching. It is the recitation which finally makes a pupil a dependent, or a student with initiative and courage.

CHAPTER VII

THE SCHOOL AS A COMMUNITY CENTER

The public school is an institution in which all the people should be interested. Progress in country life demands that its doors swing open freely, inviting hearty coöperation in the common cause of a better life for all. It must become a center of interest — a plant for promoting neighborliness and common brotherhood, and a fount of ideas on all civic questions and problems of common interest.

We Americans have been slow in awakening to an appreciation of the immense possibilities of the school as a community center. But at last there is an impulse to "Get together, work together, stick together!" The logical place of meeting is the schoolhouse. And what miracles of transformation result! The little one-room schoolhouses, with their banging shutters, missing window glass, and unstable porches, their dilapidated outbuildings and unkempt yards, disappear. In their stead, attractive, comfortable, well-equipped school buildings are rising. Besides suitable classrooms, laboratories, and library, each has an assembly hall large enough to seat all the pupils of the district, and their parents and friends as well. The outbuildings are approved sanitary models; the grounds are attractive and adapted for athletics, with tennis court, ball, and croquet grounds. There is a cozy home for the teacher, — a model of neatness and beauty. And as part of the equipment of the school, a small farm adjoins, where pupils

and teacher, assisted by the farm demonstration agents and experts from the agricultural experiment station, work out practical farm problems that are of vital use to the neighborhood at large.

In Washington — a state that justly takes pride in its modern school equipments — one school building is surrounded by eleven acres of ground, including an athletic field, tennis courts and playground. The school grounds are well planted with shrubbery. There is a well-equipped chemical laboratory, a mechanical drawing room, manual training and domestic science rooms, and a fully equipped gymnasium, with shower baths and lockers. The big assembly hall, which is the high-school study room, is a meeting place for all the countryside, and the scene of frequent entertainments, socials, and festivities of all kinds.

In Minnesota are some thoroughly equipped schools having each a modern central building and a separate building for manual training and forge work. There is an adjoining large school farm, and considerable time is given to agriculture and domestic science. Once a year the farmers and their wives attend a two-day short course at the school building, dinners being served by the domestic science department. The schools also hold a night short course in the dull season, one night weekly for ten weeks. This is intended particularly for the grown-ups of the community.

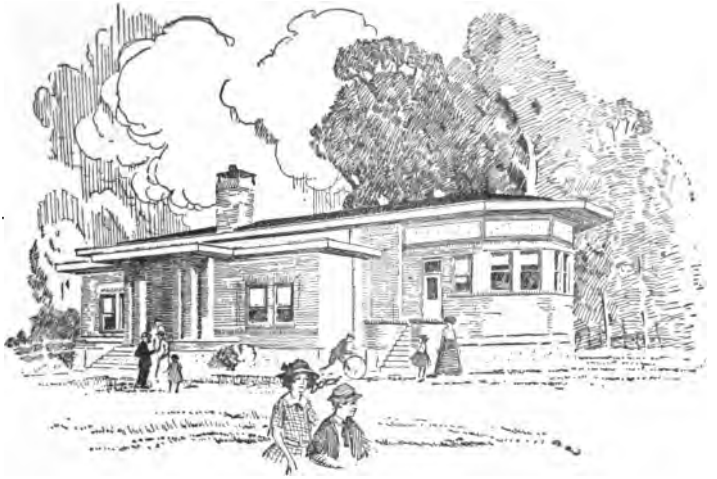
The schools mentioned, and nearly all others of such thorough equipment the country over, are consolidated schools. People are becoming wide-awake to the great waste of the small school. Even a one-teacher school

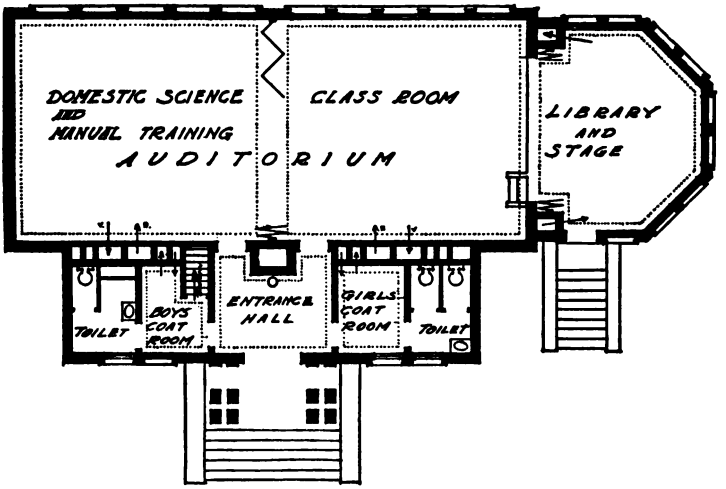
modern in architecture, well kept, and in charge of a well-paid teacher, cannot fully meet the demands of modern country life. Under the most favorable circumstances such a school cannot approximate the work that it should do — prepare the boys and girls of the country community for satisfied, well-rewarded living from the country soil.

In many places, however, consolidation is not practical, and the one-teacher school must continue to do duty. But there is no reason why the ugly little old one-room-and-an-entry buildings should stand! "Beauty is not for the rich; neither is it for the poor. It is for all. A beautiful country school building, appropriately located, will exert a quiet but persistent educational influence on all who are associated with it, in school or out. Its unconscious reflex influence will enter into the life of the neighborhood and of necessity express itself in many ways. All who see a beautiful and appropriate school building are inclined to be more loyal to the cause it represents and less satisfied with ugliness anywhere. The district schoolhouse is the only building in the community that belongs to all, and in a definite way it reflects the civic standards of all. It is, therefore, important to express through it the highest attainable ideals of beauty and fitness, so that it may serve all acceptably."[1]

A splendid example is the new one-teacher building, erected at Orchard Lake, Minnesota, and designed to take care of the social, religious, and political needs of the neighborhood as well as its educational needs. It is located

[1] *Rural Schoolhouses and Grounds*, U. S. Bureau of Education, 1914, Bulletin 12.





A New One-Teacher School and Community Center

on a five-acre tract, which gives ample space for playgrounds and agricultural experiments. The entrance hall leads to the classroom and to the domestic science and manual training room; on either side of the hall are the boys' and girls' coat room, each with its own private toilet. The well-lighted library is separated from the classroom by folding glass doors, so that pupils at work there are shut off from the noise of the schoolroom, and yet are in full view of the teacher. The floor of the library is raised two feet above the level of the classroom, making it available as a stage for lectures and entertainments. The doors between the classroom and the workroom fold back, thus converting the two rooms into a large auditorium. If the seats are not desired, they are readily removable. The building is of rough texture brick, equipped with modern heating, plumbing, lighting, and ventilating systems, and cost about $5000. It is used for union services on Sunday, for all sorts of social gatherings throughout the week, and plans are under way to have the library open evenings.[1]

Perhaps such a building could not be built in your district, at least, not for a few years. But are there not many things that could be done? "Experience indicates that with direction and encouragement upon the teacher's part, the school easily becomes the community center for all desirable coöperative activity. The larger interests, the wider scope and possibilities revealed in dealing intimately with more people engaged in a common cause, the exchange of social courtesies, all tend to broaden the outlook of patrons as well as children. Neighborhood differences, including petty quarrels and feuds, are lost

[1] Haugen and Newstrom Company, Architects.

sight of in the thought, and living is rounded out with contentment and a new hope."[1]

The first thing necessary is a community club. Rural delivery, telephones, and automobiles have brought the outside world nearer together, but have distanced neighbors. Start the get-together movement. Helpful material is available. An Iowa farm journal issues a folder containing a constitution suitable for a farmer's community club, together with information as to subjects suitable for debates or papers, and directions for securing information on various subjects. It is sent to readers of the paper on receipt of a two-cent postage stamp. Many of the state departments of agriculture furnish directions for organizing farmers' clubs, and supply suggested programs for exceedingly interesting, instructive, and practical meetings.

Briefly the aim of such a club should be:

I. To increase production:
   (1) Through improved methods of cultivation.
   (2) By diversification.
   (3) By seed selection.
   (4) By conservation of soil and other natural resources.

II. To increase profits:
   (1) By coöperative marketing.
   (2) By coöperative manufacture.
   (3) By coöperative use of improved implements.
   (4) By conservation of surplus products.
   (5) By providing for better methods of rural credit.

[1] *The Rural School System of Minnesota*, U. S. Bureau of Education, 1915, Bulletin 20.

III. To increase the length and happiness of human life:

(1) Through studying food values.
(2) By sanitary, comfortable, and attractive houses.
(3) By the use of modern conveniences in the home.
(4) By education, study, and demonstration.
(5) By community efforts for moral and mental progress.
(6) By religious and social uplift.

Naturally the work of coöperative production, buying and selling, and coöperative measures for rural credit falls to the men; the women concern themselves with coöperative study of household management, cooking, sanitary and hygienic problems, labor-saving devices, and enterprises of social, literary, musical, and artistic interest. The young people are reached through the latter channels, and the club is a convenient medium for the planning of various corn, poultry, garden, and canning contests for their benefit. Spring is the best time for these organizations. Get in touch with the county agent and the farm adviser. If there are no such officers in your section, apply to the state superintendent of schools for information on what is being done in your state, and write to the Department of Agriculture at Washington for bulletins and advice. Competition and friendly rivalry among the boys and girls are the keynotes of success in this work.

One whole county in Illinois is organized into a Young Women's Country Club that is doing great work in community usefulness. Each township has its own club and president; in some instances, where the township is too large for all the girls to meet conveniently at one place,

there are two clubs. Each has an older woman for chaperon and adviser, to "suggest avenues of usefulness, and to be an inspiration toward all that makes for noble character." The girls interest themselves in many things, from canning-club work, charity sewing, and circulating libraries, to Maypole fêtes. One of the directors, writing of their activities, says: "You just ought to see our girls sew. They mean business, and they work like beavers. There isn't a lazy girl in the club. Just now they are taking steps to help a girl through high school. This girl was graduated from our country school with one of the highest averages in the county, but is unable to buy books or clothing to continue her education. So the club is going to see that she has these things. They love to play the part of big sister, and they do it so that you never think of it as charity, and I don't believe they do, either." Naturally these girls are delighted with the joys and opportunities of country life. "Oh, I wouldn't live in town for anything!" says one of them. "It is too lonesome in town!"

All community clubs branch out into extension work; their influence begins to be felt at once in the home and community. As an example, the farmers' club of a public school in Minnesota has erected a farmers' coöperative laundry, which is probably the first of its kind in the United States. Few things can mean more to the farm women, in reducing the amount of real drudgery, than such a labor-saving plant. This club pays the students to test corn and other grains for the community, to make cream and milk tests, and soil analysis. They have a farmers' lecture course, at which lantern slides and other illustrations are used.

Another such club has painted and repaired the schoolhouse, provided the grounds with tennis court and teeter boards, supplied the schoolroom with several pictures and valuable pieces of apparatus. They are now working for a piano. They maintain a coöperative buying and selling organization, and a circulating library of the leading magazines. Meetings are held every two weeks in winter, once a month in summer; and there are frequent plays, socials, and festivals. The object of this club is just helpful neighborliness.

In Texas an organization of country women has done much in two years to make the community a better place in which to live. They keep in touch with other women, through the federation, and try to profit by their example. They use programs furnished by the state department of agriculture, giving considerable attention to home economics, care of children, and the management of the sick room. Meetings are held at the central school building, which is fitted as an ideal community center. There are a rest room and a circulating library, shade trees, and tennis court. There is an auxiliary club of young women, with committees on Good Roads, the Country Beautiful, and Recreation.

The old saying that everything needed for home consumption should be grown on the farm is just as true of social diversions as it is of more material things. It is possible to keep our boys and girls so happy and occupied with home pursuits that they will not be attracted by the doubtful advantages of the city. Social life need not be expected to solve the rural problem, but it points a way to increased contentment if rightly organized and carried out.

The school must awaken to its position as the most honored and hospitable *home* in the community. And the burden of this reputation need not necessarily fall upon the teachers! Many hands make light work. Committees from the various clubs, the members of the domestic science class, and others may be pressed into service. The following suggestions may be helpful.

1. Lyceum entertainment course.
2. Plays, pantomimes, afternoon and evening celebration of Christmas, Flag Day, Arbor Day, Bird Day, and other holidays.
3. Field meets, basket ball, baseball.
4. School fairs.
5. Informal afternoons, with light refreshments served by home science class.
6. Literary programs, debates, and mock jury trials.
7. Box parties, musicals, and student socials.
8. Camera clubs, glee clubs, art clubs, athletic clubs.
9. Boy scouts, camp-fire girls.
10. Mothers' clubs, young women's clubs, young men's clubs.

The time is coming when each school will have its social director. One town in New Jersey has two paid secretaries, supplied by the public recreation committee, who give their whole time to providing evening entertainments, which are held at the schoolhouses. Funds for this work come from three sources: grants from the city council, from the board of education, and fees charged at the various occasions. At four schoolhouses in different sections of an Idaho city, one entertainment a week is given. These are furnished by a joint committee from

the three women's clubs, and in alternating weeks by the mothers' clubs.

The ladies of a consolidated district in Iowa are making their school an art center. In connection with two programs given by the school, they arranged an art exhibit. Receipts from these entertainments, together with private gifts and money received from a dinner given when the building was dedicated, placed $300 in the art treasury. This was used to buy pictures of which any school might well be proud. They form a decided contrast to the cheap reproductions and calendar views found as the only decorations in so many schools.

A country-life club of Illinois, holds an annual rural-school fair that is most interesting. Entertainment is provided by several hundred school children and home talent of the country. One year it consisted of a pageant on pioneer life, four hundred rural school children participating. Each school had one or more floats, portraying scenes of Indian and colonial life, the union of the colonies, and similar historical incidents. At another time a pageant based on the history of Illinois was a prominent attraction. The stock, poultry, and garden club exhibits are splendid. Only medals, ribbons, and pennants are offered to prize winners, parents and teachers being urged not to place value upon honors but upon conscientious work. Every effort is made against unfair methods. Pennants and pictures are given to teachers who have the best school display.

In Kansas is a community playground worth duplicating thousands of times. It is carpeted with the softest, thickest blue grass, and beautifully shaded. An old schoolhouse has been converted into a picturesque rest room and meeting

place. There is a dance pavilion, a tennis court, a croquet ground, and a bowling alley, together with sand piles, swings, and seesaws for the youngsters. A pasture, next to the grounds, is kept in ideal trim for a baseball diamond. Every year there is a grand picnic, which is attended by hundreds of people. A nominal charge is made for the two bounteous feasts provided, the funds being divided equally between the playground and the community church near at hand. During the hot weather, ice cream and pop are sold. There are no special dues or regulations, but one thing is thoroughly understood — to take good care of whatever is being used. "Fun and good fellowship" is the club's slogan.

The best rule for every community club is: *Never miss a chance to celebrate.* If your neighbors have an anniversary, get together and help them celebrate it; if there is a birthday, get together, with a small gift, and make the occasion memorable. Make Independence Day, Harvest Home, and New Year's the occasion for community spreads. Have socials in and out of season. And don't forget the strangers! See that everyone is invited and made welcome. Foster the sentiment: "Look about and extend a helping hand."

As a practical example, in a town in Wisconsin, the Potato Growers' Association was planning a great potato show, hoping to win honors from the State Association. "What can we do to help?" the women questioned themselves. And the answer came quickly: "Give demonstrations on how to cook the potato." It was a new feature for a potato show and proved highly successful. The potato was served in twenty-five ways, each dish being displayed in proper style of serving on a carefully laid dining table. Later, samples were distributed among the

audience. And the men took good care to get their share, sometimes to the neglect of the experts, in the hall across the street, who were lecturing on potato culture. The management delightedly declared that henceforward such a demonstration must be a part of the annual program.

The agricultural extension departments of the state universities in many states are holding short courses for the whole community. Get in touch with your department and see if anything of this kind would be possible in your district. Any one who can profit by the course is made welcome. Time can be chosen to suit the farmers. Usually it is best to begin after the rush of fall work is over and finish the course by March first. Sometimes it is possible to have only a week or ten-days course. The hours should allow time for chores at home morning and evening. Farm law, special phases of agriculture, blacksmithing, carpentry, cooking, sewing, and other subjects are presented by enthusiastic instructors. Students may take whatever part of the course they desire.

The following topics make good subjects for club study and debate:

1. A Farm Fish Pond.
2. Saving Steps in the Kitchen.
3. The Attractive Table.
4. The Well-planned Meal.
5. Need of the Beautiful in the Home.
6. Courtesy to the New Neighbor.
7. The Duty of a Good Neighbor.
8. The Value of Pictures in the School and Home.
9. Pleasure from the Garden.
10. The Joys of Country Life.

The United States Bureau of Education has long been alive to the necessity for promoting the highest ideals in home making, and a variety of bulletins may be had not only upon all the activities of the home, but upon the more important offices of parenthood and child nurture. Lists may be obtained by addressing the Public Health Service and the chief of the Children's Bureau, Washington, D. C.

There are a number of kindergarten bulletins for the mothers, and a helpful little leaflet entitled, *A Thousand Good Books for Children.* One cent buys a map of the United States, 8½ by 12 inches, showing all the states, the important cities, rivers, and lakes. Pasted on cardboard it is splendid for a cut-up picture puzzle, or it may be used in a variety of ways. Four cents brings a booklet of wood-working exercises for the boy who likes to "make something." Ten cents gets a little book of home handicraft, designed particularly for farmer boys, showing them how to make and repair things used about the place. Then there is a little book on bird houses, and all sorts of interesting bulletins about the birds themselves. For the girls, there are interesting arts and crafts suggestions, candy and cake recipes. Uncle Sam is ready, too, with pin money suggestions for wide-awake boys and girls.

A National Reading Circle has been formed for the purpose of stimulating a desire for good reading and to further home education. Information can be had by writing to the Bureau of Education at Washington. If you live in a state doing library extension work, some arrangement has, no doubt, been made for placing sets of the reading circle books near you. Find out about it.

Ask for free printed lists of government publications and ascertain just what would be interesting to your family and to your neighbors. Talk about it at the club; many people have no idea whatever of the vast amount of experimenting, researching, studying, and explaining — the real effort that our government is making in the great cause of a richer, better life for all.

CHAPTER VIII

THE CLASS IN READING

"Reading has for its highest purpose to open the whole universe to man. It brings him into contact not only with distant lands, but with the great minds of the present and the past. A man who loves good reading has in his own being a spring of never-failing joy; there are no lonely hours, no monotonous days for such a person. Raging storms and snow-bound earth may shut out living companionship, but these circumstances only serve to bring him into nearer communion with the authors he loves."

There is nothing a teacher can do for pupils to more advantage than to teach them to love good literature; yet there is probably no study in the school curriculum that is so much neglected. "The ability to read is the key to all recorded knowledge. The leading aims are to read understandingly, fluently, and intelligently; to gain thought from the printed page; to distinguish good from bad reading; and to form a taste for literature and the habit of reading good books." [1]

Too often the teacher in reading falls into a rut and blindly follows in the lead of the textbook, forgetting to color the lessons with originality. She neglects to consider that probably the author of the textbook was controlled in his arrangement by just the two principles of easy gradation and a variety of exercises as to form and manner. Frequently when the pupils have exclaimed triumphantly, "We have finished the book! We are ready for a higher one!" the teacher says: "Yes, we have gone through the book, but we do not know it well enough to

[1] Van Cleve.

leave it. We will have to review it." This causes some of the pupils to make wry faces, and justly too, for probably some of them have already been through the book three or four times. The selections have lost interest for them. They know the subject matter of each lesson and it is not of much moment to them if they do not know all the words. If the old lessons are assigned, they study in a half-hearted manner and the teacher is obliged to exercise no little vigilance to keep them at work.

Would it not be better to allow them to lay aside the old book and take entirely new lessons of the same grade from the supplementary readers in the library? If you are so unfortunate as to have no supplementary readers or library, do the next best thing. Many good books and papers may be found in nearly all homes nowadays. Encourage the pupils to bring these. Thanks to the enterprising agent, there will probably be enough of a kind found in the community to furnish good new reading lessons upon interesting topics. If all the pupils do not have the same lesson, it does not matter. The live teacher can manage this so as to give added interest to the lessons. Cut-up stories, numbered in proper sequence, and distributed among the pupils make ideal reading lessons.

The wise teacher does not allow her pupils to "go through" the book until they are ready for a new text; she supplies and introduces the supplementary exercises as they are needed. She studies, analyzes, and classifies the lessons in this textbook and rarely follows blindly in its lead. The lessons in almost any school reader may be grouped under one or more of the following descriptive headings:

1. Stories which have a moral.
2. Studies of animals.
3. Lessons suggesting occupations.
4. Life and institutions in other lands.
5. Miscellaneous.

The teacher can very easily select the reading material adapted to her class. She may not care for so many moral stories; or she may know a good story illustrating some precept which she wishes to impress upon her class, and is glad to introduce it in the form of a reading exercise. There are probably some pupils in the class who will derive great benefit from lessons illustrating kindness, truthfulness, the failure of greed, the folly of hasty conclusions, and so on. Clippings or notes of some ethical stories are valuable. The stories of the second class may easily be connected with nature study, and an abundance of appropriate stories and interesting descriptions of animals are ready at hand. The pupils will be glad to bring in stories. It is a good idea to have an "animal day" and let each pupil read the story he brings. Each will wish to read his story as well as possible. Some favor might be allowed for the best story. The stories of the third class all hint at the occupations of mankind and bring together a large number of facts about industrial life.

In the fourth class are such stories as, "A Child of the Cold," "Children of the Forest," "Little People of the Desert," "A Child of the Nile." Here four phases of life are contrasted with the pupil's own. To the child the information is the matter of interest; to the teacher the mastery of language is the center, and she governs herself accordingly.

Let us illustrate a way of interesting the children in the story of "A Child of the Cold." During the time set aside for general school exercises, the teacher introduces the "People of the Cold," and dwells entertainingly upon their life and habits, relating some good story about them. In closing she mentions incidentally that such and such a grade will have an interesting lesson that day about a little boy whose home is far away in the cold country. In the conversation of the class exercise, questions bear upon the following topics:

1. The place of the little boy's home.
2. The house: its material, its furniture, stove, bed, etc.
3. Food: what and how cooked.
4. Clothing: what and how obtained.
5. Occupations: his play, sled and dogs; his work, making thread from reindeer sinews and needles from bone, keeping the hunters supplied with bows and arrows.
6. His day and seasons.
7. A comparison of his life with that of the pupils. Which is to be preferred? Why?

Here the teacher cultivates the thought side. She stimulates the pupils to think and to express their own thoughts. She usually follows up the reading lesson by having them reproduce the thoughts gleaned in a story of their own for a language exercise. Language and reading should go hand in hand. It is hardly possible to teach one thoroughly without calling upon the sister branch.

The teacher manages the lessons in the other divisions in much the same manner. She keeps continually in mind the following principles: (1) that the textbook order is

not fixed; (2) that the lessons may be used for more than one purpose, but ought in every case to be used for a definite purpose; (3) that every exercise should add to the child's power to use language and to get at the thought; (4) that his literary taste must be cultivated and stimulated.

Methods. It does not matter whether the phonic, word, synthetic, or other method is used — all have been known to produce excellent results, if only interest is kept at a white heat. It is always a mistake to keep children long at work on short, easy sentences expressing only commonplace thoughts that excite little or no interest. Instead of repeatedly reviewing old lessons, let the pupils have new books that will awaken fresh interest. As soon as they begin to read a story because of its interest their rapid progress is assured, and if suitable books are placed in their hands they will read a great deal out of school. Hence the value of a good school library and a teacher who is thoroughly conversant with the books it contains, and who knows just where each one may be made to serve the purpose.

Teachers need not fear to let the pupils read stories containing hard words, provided they are interesting. The average child has a large bump of curiosity, and if he is stimulated by interest he will find out what the words mean. Let the teacher who doubts this try the experiment of beginning an exceedingly interesting story in the class and then handing the book to the pupils to read at their seats or at home, and see how quickly they will master it.

John Swett gives the following illustration of this point: "I know of one little fellow who learned to read at home

before he was six years old. He was not a precocious boy. His grandmother taught him his letters from nursery picture books. In some way or other, probably coached by his grandmother, he learned to read nursery rimes. At length in looking at the pictures in a copy of a children's magazine, he became interested in a story about the 'London Cats' Meat Man.' He stuck to that story for three weeks. It was full of long and hard words. He gave his grandmother, his mother, his father, and his elder sister no peace until he had read that four-page story through. After he had mastered it he read many other stories without help from any one. When six years old, he went to school and was put in the primer class. At this degradation he protested so vigorously that the thoughtful young teacher tried him successively in reading from a second reader, a third reader, and a fourth reader, and then wisely excused him from the primer class." How many of us have not seen a pupil made sick of reading and school generally by being repeatedly drilled upon that which he already knows? He must be shaped and fashioned mentally after the teacher's own pet theory; so he listens to the "Little Johnny" type of story and learns to his infinite disgust that the character which he has known as *r* for so long must now be called the "cross-dog sound," and so on! No wonder he frequently grows discouraged and thinks reading a great bore.

While the leading idea throughout the whole course in teaching the art of reading should be the thought side, or the quality of the reading matter; the "mechanical-mental" side of the art must always remain an important secondary consideration. The extent of drill work in this direction

must be determined by the skill of the teacher and the ever-varying needs of the different grades. It is evident that some attention must be given to local training, to correct pronunciation, to emphasis, and to inflection. Then, too, such minor matters as the position of the class, the attitude of the pupil, and the manner of holding the book must receive careful consideration. The teacher should have various ways of conducting the recitation and not allow the pupils to come listlessly to the class merely to go through a humdrum monotonous performance day after day. The following suggestions may be of value:

1. Remember that children like activity; there should be plenty of action in the reading exercises.

2. Devote a part of every recitation period to blackboard work. Have the class write dictation exercises for the valuable drill in punctuation and spelling. Let them see who can write the longest list of hard words found in the lesson from memory in a given length of time. See who can write the most about the subject matter of the lesson in five minutes, or ten.

3. Have frequent drills in sight reading. Instead of hearing the recitation the pupils have prepared, give them one they have never seen before.

4. For drill in recognition of words, let the teacher or some pupil copy a paragraph from the lesson, or a collection of sentences composed of familiar words, then have a hunting game. The teacher chooses the hunter and he selects his pointer. The hunter then mentions what game (words) he wants and the pointer finds it. If he fails to find the game, or if the hunter fails to keep the pointer busy, new pupils are chosen.

5. Always make the reading lesson the basis for language and composition work.

6. Try reading by commas, by periods, by sentences, until a mistake is made, until a certain word is reached, and the like. Try reading in concert occasionally.

7. Teach the pupils the proper use of diacritical marks. Have them make a friend of the dictionary.

The teacher who would teach reading successfully needs to be constantly adding to her stock of stories. She should be a subscriber to one or more of the best children's magazines. Every school library should contain several sets of readers for use in supplementary reading. The following list may be helpful to those intending to add to the school library or to their own library for desk use.

For Pupils in Primary Grades:

Baker, Emilie Kip. *The Children's First Book of Poetry.*
Baldwin, James. *The Fairy Reader*, and *Fairy Stories and Fables.*
Burnett, Frances H. *Little Lord Fauntleroy*, and *Little Saint Elizabeth.*
Ewing, Mrs. J. H. *Jackanapes.*
Farmer, Florence V. *Nature Myths of Many Lands.*
Fox, Florence C. *Indian Primer.*
Johnston, Emma, and Barnum, Madalene. *Book of Plays for Little Actors.*
Old Testament Stories.
Potter, Beatrix. *The Tale of Peter Rabbit.*
Powers, Mabel. *Stories the Iroquois Tell Their Children.*
Stevenson, Robert Louis. *A Child's Garden of Verses.*

For Teachers of Primary Grades:

Bryant, Sara C. *How to Tell Stories to Children.*
Hoxie, Jane L. *Kindergarten Story Book.*
LaRue, Daniel W. *The Science and the Art of Teaching.*

Lincoln, Lillian. *Everyday Pedagogy.*
O'Shea, Michael V. *Everyday Problems in Teaching.*
Palmer, Luella A. *Play Life in the First Eight Years.*
Richards, Laura E. *Five Minute Stories.*
Stoner, Winifred S. *Natural Education.*
Turner, Nellie E. *Teaching to Read.*
Wray, Angelina. *Jean Mitchell's School.*

For Pupils in Intermediate Grades:

Alcott, Louisa M. *Little Men.*
Aldrich, Thomas Bailey. *Story of a Bad Boy.*
Andersen, Hans Christian. *Fairy Tales.*
Baker, Emilie Kip. *The Children's Second Book of Poetry.*
Babbitt, Ellen C. *Jataka Tales.*
Baldwin, James. *Fifty Famous Stories Retold.*
Burnett, Frances H. *The Secret Garden.*
Carroll, Lewis. *Alice in Wonderland.*
Donnell, Annie H. *Rebecca Mary.*
Grimm's *Household Stories.*
Gulliver's Travels and *Robinson Crusoe.*
Harris, Joel Chandler. *Nights with Uncle Remus.*
Hawthorne, Nathaniel. *Tanglewood Tales* and *Wonder Book.*
Lamb, Charles and Mary. *Tales from Shakespeare.*
Longfellow, Henry W. *The Song of Hiawatha.*
Twain, Mark. *Tom Sawyer.*
Whittier, John G. *Snowbound.*
Wiggin, Kate Douglas. *The Birds' Christmas Carol.*
Wilson, Gilbert L. *Indian Hero Tales.*

For Pupils in Advanced Grades:

Alcott, Louisa M. *Little Women.*
Bachman, Frank P. *Great Inventors and Their Inventions.*
Baker, Emilie Kip. *The Children's Third Book of Poetry.*
Baldwin, James. *American Book of Golden Deeds.*
Bennett, John. *Master Skylark.*
Browning, Robert. *Selected Poems.*
Bullen, Frank T. *Cruise of the Cachalot.*

Cooper, James Fenimore. *The Deerslayer.*
Dana, Richard H. *Two Years before the Mast.*
Dickens, Charles. *David Copperfield.*
Eliot, George. *Silas Marner.*
Franklin, Benjamin. *Autobiography.*
Hale, Edward Everett. *The Man Without a Country.*
Hawthorne, Nathaniel. *The House of Seven Gables.*
Hughes, Thomas. *Tom Brown's School Days.*
Irving, Washington. *The Sketch Book.*
Jones, Grace L., and Arnold, Marguerite I. *Bunyan's The Pilgrim's Progress.*
Lamb, Charles. *Essays of Elia.*
Lincoln, Abraham. *Addresses and Letters.*
London, Jack. *The Call of the Wild.*
Longfellow, Henry W. *Evangeline*, and *The Courtship of Miles Standish.*
Morton, Cora. *A Book of Old Ballads.*
Parkman, Francis. *The Oregon Trail.*
Purcell, Martha G. *Stories of Old Kentucky.*
Scott, Sir Walter. *Ivanhoe*, and *The Lay of the Last Minstrel.*
Shakespeare, William. *The Merchant of Venice.*
Skinner, Eleanor L. *Tales and Plays of Robin Hood.*
Stevenson, Robert Louis. *Treasure Island.*
Twain, Mark. *The Prince and the Pauper.*
Washington, George. *Farewell Address.*
Webster, Jean. *Daddy Long Legs.*
Whitehead, A. C. *The Standard Bearer.*
Wiggin, Kate Douglas. *Rebecca of Sunnybrook Farm.*

CHAPTER IX

TEACHING ARITHMETIC

The ability to teach any subject well requires on the part of the teacher a thorough knowledge of the subject. But more: that knowledge should be used so skillfully as to make it an instrument of intellectual culture. If this be true, the teacher of arithmetic must make some special preparation.

"The teacher of arithmetic should know it by its principles, rather than by its rules and facts. He should so understand it, that if every arithmetic in the world should be burned, he could still make another, constructing its rules and explaining their principles. He should understand arithmetic so well that he could teach it thoroughly though all textbooks should be excluded from his schoolroom. When the teacher reflects that without arithmetic the wonderful exchanges made through the network of modern business must be reduced to the simple barter of barbarous times; that without arithmetic manufacture and manipulation of delicate or highly effective machinery must cease; that the almost miraculous processes of the chemical and physical laboratory must be suspended; and that without the proportion of numbers, architecture, sculpture, painting, and even poetry and music must all lose their charms, then he can comprehend to what an extent arithmetic lies at the foundation of modern civilization and contributes to the physical, intellectual, and even

spiritual welfare of mankind; then he can see why the teacher should be an entire master of it." [1]

On the other hand, Dr. Arnold preferred activity of mind and interest in the work rather than high scholarship. It is certainly true that, while the possession of knowledge is desirable, it does not always insure a good teacher. One teacher succeeds where another fails, not because she knows more or is better prepared, but because she has cultivated the ability to stand before her class and impart knowledge. Joined with this there must always be the ability to adapt knowledge which the teacher possesses to the mental capacity of the pupil. Because a teacher knows a certain point and sees it clearly herself, is not a sure sign that the pupil understands it or grasps it. Her success as a teacher will depend on how she does the work of explaining. Skill in suggesting points of thought, in questioning so as to lead the understanding aright, and in placing the subject in the varied lights and relations which interest different minds is required.

The teacher should have the subject matter of the lesson in mind, not in dim and shadowy outline, but in bold relief, with every essential fact and principle clear and distinct. In the presence of the class she has no time to recall the half-forgotten results of past study, or to pursue some new idea or suggestion to see whether it be truth or fiction. A young teacher once asked President Garfield, then of Hiram College, the secret of the art of arousing and holding the attention of the pupils. The wise answer was, "See to it that you do not feed your pupils on cold victuals. Take the lesson into your own mind anew, rethink it, and then

[1] David P. Page.

serve it hot and steaming, and your pupils will have an appetite for your instruction, and you will have their attention."

There has been a great deal of aimless teaching of arithmetic. The first recommendation made by the Conference on Mathematics, appointed by the Committee of Ten, was that the course in arithmetic be at the same time abridged and enriched; abridged by omitting entirely those subjects which perplex and exhaust the pupil without affording any really valuable mental discipline; and enriched by a greater number of exercises in simple calculation and in the solution of concrete problems. This Conference suggested the curtailment or entire omission of compound proportion, cube root, obsolete denominate quantities, duodecimals, etc. Puzzles, "catches," ridiculous questions, and tricks with numbers — such as "If the third of six were three what would the fourth of twenty be?" and "Show the half of eight to be naught," are well enough for the purposes of play and pastime, but they have no place in the serious work of the schoolroom. The subject of arithmetic needs no such accessories to give it interest.

We need more practical work in the schoolroom. Who of us has not seen in the hands of children eleven, twelve, and thirteen years of age examples of compound and complex fractions which were more difficult than any operation which any bank cashier in the city of New York has occasion to perform in the course of his business from January to December? The most jagged fractions, such as would hardly ever be found in actual business operation, are piled up to produce an unreal and impossible difficulty; and the child, having been furnished with such an arithmetical

monstrosity, is set to dividing it by another ridiculous complex and compound fraction. He becomes so heated and worried over solving such problems, that he concentrates all his energy on obtaining the required answers, and thus fails to reap the benefit of any discipline which might result from such a complicated process.

Many of our college graduates, teachers, and students are not unlike the farmer's wife, who in the absence of her husband was called upon to calculate the value of a load of grain which a neighbor had purchased at their farm. She ciphered nervously for a few minutes, blushed, and stammered that she could not do it as she had never done anything of that kind, having always taught school for a living before she married!

"Teacher," said Johnny to the bright-faced young lady, "pa gave me an example last night. I got an answer which he said was about right, but he said there wasn't a farmer or a grain dealer in the state who would figure it that way. Why he solved it in less than five minutes and it took me nearly fifteen! Now, I want to know, isn't our way all right? And what makes them do that way in the book if it isn't the way they do in business? I don't want to study arithmetic at school if it isn't going to help me any!"

"What was your problem, Johnny?" questioned the teacher pleasantly.

"It was this — 'How many bushels of corn will the north crib hold? It is 16 feet long, 10 feet wide, and 12 feet high.' I multiplied the dimensions together to get the number of cubic feet. Then I multiplied by 1728 to reduce it to inches and then divided by 2150.42 cubic inches in a bushel to find the number of bushels."

"Well," said the teacher, "that was all right."

"Yes, pa said it was," answered Johnny. "But he said there wasn't any call to go round Robin Hood's barn. He just multiplied the dimensions together and divided by two cubic feet for a bushel."

"Well!" mused the teacher thoughtfully. "I never heard of that rule before, but no doubt your father is correct about it. Were your answers exactly alike?"

"No," replied Johnny. "I had a few bushels more. I told father that probably my way was more exact. He said that maybe it was, but that it was a long way from being practical."

"That's just what my father said the other night when I was trying to figure up a pile of wood," interrupted a boy who had been listening eagerly. "He said the arithmetics ought all to be made over and have a little common sense put into them."

It is a good plan to introduce many practical problems, supplementary to the subject studied. Such problems are all the better if derived from the contingencies of actual business. Any farmer, artisan or merchant, in an hour of leisure, would readily furnish for the asking a supply of such problems, together with modern business methods of solution. Recently in a grocery store a customer inquired, "How much is sugar to-day?" The clerk replied, "Thirteen pounds for a dollar." "Then," said the customer, "give me seventy-five cents worth." From long familiarity with this form of problem, the clerk at once adjusted the scales and proceeded to weigh out the sugar. Here was a practical problem of a kind not found in the books, but of everyday occurrence in business. How

many students would have been ready to weigh out the sugar at once?

Said a prominent business man the other day, "I find it very hard to obtain an accurate accountant; so many cannot be depended upon to add a column of figures correctly. It seems to me there must be something wrong with the school system." There is, and the system of marking bears a large share of the blame. Ever since he entered school the pupil has been taught that ninety-five in figure processes is excellent; ninety, good; eighty, fair; and even seventy good enough to pass. When he goes out into the business world, he learns that ninety per cent accuracy in figuring, instead of being good, is absolute failure; that there is no place in the world for a ninety per cent accountant. His inaccurate facility in the use of figures gained for him much credit in the schoolroom, but in the store it is worthless. The fact that he knows how to solve the problems and can explain them with the "hences" and "sinces" in their proper places, is of no avail in his effort to retain his place as an accountant. He is inaccurate; hence his work is of no value whatever.

The most important part of the teacher's work is not the correcting of the pupil's mistakes; it is rather the training of the pupil into such habits that mistakes will not be made. Many a teacher sits up at night to correct errors that she might better sit up in the daytime to prevent. Let the work in the fundamental operations be thoroughly and carefully done. We heard an old teacher complaining not long ago that a certain graded system of arithmetic kept the pupils too long drilling on the operations and did not "get them down to business soon enough." Surely

the laying of the foundation in arithmetic, as in everything else, is the most important point to be considered. Probably there is no better device for teaching accuracy than the old-time game called "Cipher Down." The teacher chooses a pupil to pass to the board and cipher; he, in turn, chooses another pupil to cipher with him; they "guess the number" and the one making the nearest guess says whether they will add, subtract, multiply, or divide. The teacher gives the numbers for either operation and the pupil who first finishes the work correctly "ciphers down" his opponent, who takes his seat. The winner chooses another pupil to cipher with him. This works up a good healthy spirit of rivalry, and the pupils will put in a good many of their spare moments doing practice work in order to win the victory.

All blackboard, tablet, and manuscript work of the pupils should be executed with neatness and system. Neat and methodical habits of written work can only be acquired by constant vigilance, but they are worth all they cost. Much of the work assigned should be required to be brought to the recitation for inspection. The fact that the work will be inspected by the teacher is a great stimulus to the pupil, especially in the small classes of the country school, and the examination of work so prepared will impose no great burden. It is a good plan to select a pupil from each grade to help look over papers. Each pupil should examine work in the grade below his own.

It is well to have frequent written reviews or tests which are both thorough and searching. It is seldom necessary to memorize rules. Time spent by the pupils in originating processes of solution is much better employed than in

memorizing the author's rules and solving problems by them. The one makes independent thinkers, the other machine workers. Definitions, whether given in the author's or the pupil's language, should be correct. The general principles of arithmetic should be carefully committed to memory by the learner. They are the first truths of the science, and upon his mastery of them his success in numbers depends.

It would be impossible here to dwell upon the methods of presenting the various topics of arithmetic, but we would again emphasize the importance of common sense, accuracy, thoroughness, and neatness in all number work. Aim to give your pupils, especially the boys who may be in school only a few years at most, a good practical understanding of such business arithmetic as they will need in their everyday life.

CHAPTER X

HISTORY IN THE GRADES

The value of history as a school study depends on the manner in which it is taught. Not many years ago, when learning history meant the memorizing and reciting of pages in a textbook, it could not be wondered at that the pupils found the subject uninteresting, and that teachers regarded it as of little educational value. No surer way can be devised to make pupils dislike history than to require them to begin the study from the ordinary brief textbook. The child should approach the study of history through fairy stories, myths, stories of adventure, legends, pioneer tales, and biographies. The Herbartians present history as a means of promoting patriotism, of fitting for intelligent citizenship, and above all as a means of moral training. "By means of history," says Montaigne, "the pupil enjoys intercourse with the great minds of the best periods; but he must learn not so much the year and the day of the destruction of a city, as noble traits of character; not so much occurrences, as to form a correct judgment upon them."

Whatever instruction in history is given during the first five grades of the pupil's school life, must necessarily be oral. It then lies within the province of the skillful, energetic teacher to present the foundation facts and scenes in a series of short talks or stories which may be so real and tangible that the pupil will involuntarily be filled with a burning desire to know history. The teacher

inexperienced in giving such lessons should begin with a series of short talks in familiar homelike language about Columbus and his discovery of America; the adventures of John Smith; descriptions of the homes of the early settlers and stories of their difficulties with the Indians; some of the peculiar manners and customs of the people of those times; the first American schools; the boyhood of Washington, his experiences as a surveyor, and his early training in Indian warfare and similar topics. Shun dates and dry statements suggestive of the encyclopedia. Search diligently for interesting materials in the way of anecdotes, stories, poems, and songs relating to the characters and scenes which are to be portrayed. Teach a few biographies well, choosing such typical men as Columbus, the discoverer; De Soto, the explorer; Daniel Boone, the pioneer; Washington, the general; Lincoln, the statesman; Longfellow, the poet; Morse, the inventor. The birthdays of such men as Washington, Lincoln, Longfellow and other poets, who have contributed so many historical gems to the world of literature, should be commemorated with fitting exercises.

Many little books and stories have been written by experienced teachers for the assistance of their fellow workers who do not feel that they can "make up" interesting history stories, so that if the teacher cannot tell his own stories he can at least read them in a lifelike manner to his pupils. A suggestive list of helps is at the end of this chapter. It is a good plan to read selections from one or more of these books to supplement the talks. If time is limited, assign the selections for the pupils to read at home.

If the pupils have had suitable introductory lessons, they may well begin the study of history from a textbook in the

sixth year, but the teacher should exercise great care in its selection. Several textbooks should be used; if possible, let each pupil in the grade have a different text, then teach history by outline. If this is not practicable, the teacher should place the outline upon the board for the pupils to copy into notebooks kept for that purpose. The teacher should see that the pupils are particular to fill out the outlines carefully, and that they pay especial attention to locating all places on the outline maps. It is a good plan to have them hand in their books two or three times a week for the teacher to check. By having a variety of books, pupils are less likely to commit to memory the language of the text. Children who try to learn history from any single book will invariably have an inadequate and incorrect conception of it. In listening to teachers' opinions on historical topics at teachers' institutes, or in looking over their examination papers, how frequently it is easy to tell what author wrote their favorite text! Historians have their preferences and their aversions, and much depends upon the standpoints from which they view the personages of whom they write. No two writers will draw absolutely the same inferences from the sources at their command. Their work will be tinged, unconsciously perhaps, by the medium of their own minds and thoughts, by the influences under which they have been born and educated. In those cases in which men are strongly swayed by passions, self-interest, or religious prejudice, this will be especially true. Men of very doubtful character are transformed into demigods by eulogists. Napoleon has been called everything from hero to monster, and was really neither. He has been charged with infamous crimes,

or held up as a model of kingly virtues and brilliant genius. Only a careful study of many texts will give one an adequate idea of this man, the enigma of modern history.[1]

Teachers should not fail to emphasize and recognize the value of original sources in teaching history. Ancient records relating to the United States are rare, and are to be found chiefly in great libraries. However, within recent years, extracts from old books and papers have been published in cheap form for school use. Among these are the "Old South Leaflets" and the "American History Leaflets." These may be used in class and are invaluable in forming mental pictures of the early times.

Of late years, the iconoclasts have so relentlessly torn from the pages of history so much that was a source of delight to readers of former times, that we feel like inquiring, How much of history shall be left after they have gone through it all? "The illusions of history are almost infinite in number and illusory etymologies are very apt to lead the unwary scholar astray. And yet, it really does not matter at all whether the head of Horace Greeley did or did not shoot up through the top of Hank Monk's coach; whether Peter Cartwright did or did not blaze his way with a hatchet through the labyrinth of corridors in a New York hotel; whether Zachary Taylor, imperturbable in the midst of the hottest fire, did not drawl out, 'A little more grape, Captain Bragg.' In either case the story is equally good. If it be characteristic of the person to whom it is applied, it answers its purpose." [2]

[1] Mann, C. W. *School Recreations and Amusements.*

[2] Hubert M. Skinner, quoted in Mann's *School Recreations and Amusements.*

Probably the teacher who had been reading a series of iconoclastic reports, and had drilled her pupils for a week on the life of Washington, carefully omitting the story of the cherry tree, was somewhat chagrined when the little fellow in the front seat piped out in answer to her question, "Who was Washington?" "He was the little boy who cut his father's cherry tree with a hatchet, and wouldn't lie about it." What if the name of Washington does suggest to the small pupil nothing but a little boy, a hacked tree, and an angry father,— all of which, somehow, finally made him Father of his Country? He is becoming interested, and at the age of ten or twelve, he may be taught something of history which he can appreciate. Let us not put solid history into minds too young to comprehend it. Let us leave to the little ones the stories that enrich and strengthen the imagination.

Teachers should make history alive. Teach the pupils to put themselves in the place of the people they are studying about. Emerson has said that we are to read history actively, not passively; to esteem our own life the text and books the commentary. As we read, we must become Greek, Roman, Turk, priest, king, martyr, and executioner. We must fasten these images to some reality in our secret experience, or we shall learn nothing rightly. Let us supplement the dry, condensed statements of the textbook by anecdotes, incidents, stories, poems, and biographical sketches of noted men. Brief selections may be read from time to time, either by the teacher or by some good reader of the class, in connection with the recitations.

The following suggestions for class management may prove valuable:

1. Have a variety of blackboard work. Have pupils make brief outlines of the lessons. Make hasty sketches of the locality which they are studying about, locating places, rivers, scenes of battles, and so on. Try to ascertain why the battle occurred at that point, and the like. Divide the class into sections, each to write upon a certain topic.

2. Use the calendar plan for important events. Try naming the pupils after a certain colony, battle, or person, and let them tell their history.

3. Have historical matches. They are managed the same as spelling matches.

4. Endeavor to have a good collection of pictures representing historical scenes and personages. The ingenious teacher may devise various ways to use them.

5. Do not forget current events. Appoint a pupil to report the important events each day, or twice a week. Devote about five minutes to their discussion.

6. Remember that history and geography go hand in hand. The physical characteristics of a country greatly modify, or even determine, its historical development.

Finally, in the teaching of all history, let us keep in view the true Herbartian principle. Let us aim to develop the moral nature and to fit pupils to become true citizens.

A Suggested List of History Helps

Baldwin, James. *Fifty Famous People*, *Abraham Lincoln*, and *Discovery of the Old Northwest.*

Coe, Fanny E. *Founders of Our Country*, and *Makers of the Nation.*

Eggleston, Edward. *Stories of Great Americans for Little Americans*, and *Stories of American Life and Adventure.*

McFee, Inez. *American Heroes from History.*

CHAPTER XI

A TALK WITH THE GRAMMAR TEACHER

"Grammar proper is a science. The study of a science presupposes a knowledge of the facts upon which it is based; these the child has not yet acquired. Again, the mastery of a science requires a strength and concentration of mental power which are as yet only potential in the child. Not only is grammar a science, it is that science which brings to light and consciousness the subtlest operations of the soul itself. It is therefore not adapted to childhood, and should not be studied too early. I am satisfied that early and superficial teaching of a difficult subject is not only useless but positively injurious. How many, by too early study of an intricate branch, make themselves think they understand it, and thus prevent the hope of further advancement at the proper age!"

—DAVID P. PAGE.

Grammar is one of the most difficult of the common school studies. To teach it successfully requires the highest degree in the art of teaching. It is rare that a teacher is found without some pretensions to English Grammar; yet few are as frank as the young lady who was recently taking an examination for a certificate in the superintendent's office. "You have three quarters of an hour, can you write upon grammar in that time?" questioned the superintendent. "Oh, my, yes!" exclaimed the young lady, "I can tell all I know about grammar in half that time."

Grammar is not an exact science. It should therefore be taught and studied for breadth, not for nicety of reasoning. Parsing and diagraming are mere means to an end — to teach the correct use of words,— not ends within themselves. The average teacher sets out resolved to parse and

diagram every word to her own satisfaction, and then to argue everybody else into the same method. Like teacher, like pupil; and so the latter forms the same habit and goes forth to contend mightily with unbelievers. Let us do our hair splitting in mathematics, where nice distinctions are everything; not in grammar where they are next to nothing in importance. Such arguments are not entirely useless, but they are comparatively so; for the time devoted to them can be better employed. Few grammarians agree upon many small technicalities, anyway. We should get our English from literature, not from the textbooks. A young lady once asked a college professor if the authors of textbooks got their English from literature. "Professedly, yes; actually, no," replied the professor. "They get part of it from literature and a deal of it from their imaginations."

As grammar was developed after language, it should be taught afterwards. It is not only true that grammar should be taught after language, but its facts should be reached through language. The young pupil best learns the structure of the sentence, the nature and use of modifiers, by actually expressing and modifying his own thoughts. The first language lesson given in school should be one in talking, and all through the elementary course the tongue should prepare the way for the pen. Young pupils are too often expected to express on paper what they cannot express orally. "Good habits of speech are caught rather than taught." Conversation should always be made the road to composition. Dr. Emerson E. White divides language training in preparation for grammar into the following series and divisions:

I. Primary Series — Preparatory:

1. Writing words and sentences.
2. Copying maxims, proverbs, stanzas of poetry, etc.
3. Writing sentences dictated by the teacher.
4. Writing sentences expressing facts observed.
5. Writing descriptions of present actions.
6. Writing sentences containing one or more given words.
7. Writing stories which pupils have learned to tell well.

II. Secondary Series:

1. Writing the substances of reading lessons.
2. Writing descriptions and stories about pictures.
3. Writing stories told or read by the teacher.
4. Writing descriptions by answering questions.
5. Writing business papers.

III. Original Series:

1. Letters.
2. Descriptions of known objects.
3. Narratives of personal experience.
4. Descriptions of journeys, real and imaginary.
5. Descriptions of current events.
6. Biographical sketches.
7. The discussion of themes, or the essay proper.

Attention should be directed to the mastery of the more important facts and principles after pupils are well prepared for the study of a textbook. These principles should, one by one, be made familiar by continued drills. The ordinary textbooks present too few sentences for analysis in the various exercises, and as many other sentences as may be needed should be added by the teacher.

Accuracy and facility in the use of language, both spoken and written, are the chief ends to be secured by the study of grammar. What will it avail the pupil to be well versed in technical grammar and yet be unable to express his thoughts clearly and correctly? It is poor policy to spend much time correcting errors in language. Pupils should be made familiar with the correct forms, not the incorrect.

Modern usage, in spite of grammarians and textbooks to the contrary, controls the selection of words. Even the college professor, who had been lecturing upon prepositions, was forced to admit this when he closed his remarks by saying: "Remember, then, never use a preposition to end a sentence with." As a matter of fact, it is seldom that mistakes are made in the form of a preposition, but in the use of this part of speech many inaccuracies occur.

"Come and sit around the fire, Emersonia," said the hospitable western relative.

"There are physical limitations which will prevent me from doing so, Aunt Rachel," replied the young woman from Boston; "but with your permission I will sit in front of the fire."

All good writing consists of good sentences properly joined. Since the sentence is the foundation or unit of discourse, it is all important that the pupil should understand it. He should know the sentence as the skillful engineer knows his engine, so that when there is disorganization of parts, he may at once find the difficulty and the remedy for it. Sentence analysis logically conducted is excellent mental discipline. To study the fitness of the different parts of speech in a sentence to the parts of

the thought, is to learn to think. Experienced teachers agree that a correct knowledge of the structure of the sentence cannot be gained by memorizing complicated rules and labored forms of analysis. It is ridiculous to compel a pupil to wade through a page or two of such bewildering terms as "complex adverbial element of the second class" and "compound prepositional adjective phrase," in order to comprehend a few simple functions. Many teachers use the diagram to picture the complete analysis of the sentence, and analysis by diagram often becomes so interesting and so helpful that, like other good things, it is apt to be overdone. When the ordinary constructions have been made clear, diagrams should be used only for the more difficult sentences.

Perhaps no study in the school course is more in need of diversions and recreations to make it interesting than grammar; and yet there is no other study for which it is so difficult to provide these supplementary aids. The following may be suggestive:

1. Have a variety of composition exercises. The best way for pupils to learn language is by practice in expressing their own thoughts. Try giving the pupils a familiar subject. Have them write on the blackboard as much as they can in three minutes. Then have them change places and correct punctuation and spelling. After they return to their own places, let them check their sentences. Parse difficult sentences. In all blackboard work, have the pupils bound a space upon the board; teach them to write straight lines, syllabicating properly at the end of a line instead of letting the word hang over like a vine.

2. Occasionally try written analysis.

3. Diagraming will interest the pupils, and give them a good picture of the sentence.

4. Have grammar matches conducted like spelling matches, the pupils using questions in place of words.

5. Try "enriching sentences." Let the pupils take compositions of their own, and strike out all useless words. Next let them shorten the sentences, substituting simple Saxon words for the long ones. Note the added strength of the compositions.

6. Try preparing lists of nouns, adjectives, adverbs, and other parts of speech. Write a list of nouns upon the board; have the pupils prefix suitable adjectives. Suppose the teacher writes "house"; the pupil writes:

The		
old		
wooden	house.	
stone		
gray		

Treat verbs in the same way. Try making a list of "conversational verbs"; those used in writing conversations. Teach the pupils not to use "said," all the time. Among others, use the following verbs: called, prompted, asked, added, breathed, replied, announced, answered, insisted, commented, agreed, suggested, cried, urged, murmured, assured, begged, repeated, commanded, remarked, observed, gasped.

7. Teach the use of punctuation marks.

8. Give the pupils a subject with instructions to write a certain number of simple, complex, and compound sentences about it. For instance, write ten simple, four complex, and three compound sentences about "The Baseball Game."

9. Teach the use and meaning of words. Pay some attention to prefixes and suffixes. Use the dictionary frequently.

10. Try the following short method for simple analysis.

(a) The heavenly gods often came to Jimmu's aid.
(1) (2) = p. adj. o.p.

(b) George and Mary went blithely to the night school.
(1) × (1) (2) = o.p.

(c) The diamond which is pure carbon is a brilliant gem.
(1) rel. pro. (2) a.c. (2) a.c.

(d) One of the sons of Ninigi, Prince Fire Fade, went down beneath the sparkling waves of the ocean and carried back to his father's realm the jewels of the ebbing and flowing tides.
(1) = o.p. = o.p. (1 (ex)) (2)
o.p o.p. ×
= (2) = o.p. o.c. =
× o.p.

The marks explain themselves. Note that the right slant indicates adjectives and the left slant adverbs.

Finally: Remember that all grammar work must be practical. Aim to give the pupil a good understanding of English. Be sure that he can speak and write readily and correctly, even if he cannot conjugate the verb *see* in all its modes and tenses. Few pupils have much use for technical grammar after school days are gone.

CHAPTER XII

WITH THE GEOGRAPHY CLASS

Geography should give the child a rational conception of the earth he lives on and his relation to it. This view of the subject has led to radical changes in methods of teaching geography during the last century. A glance into Dwight's Geography, printed in 1795, reveals descriptive text exclusively, with no maps or woodcuts. It opens with five pages of definitions relating to the natural divisions, latitude, longitude, etc., in the form of a catechism. The following extracts taken from a general description of New England illustrate the manner of treatment.

"Q. What are the general characteristics of the people of New England?

"A. They are an industrious and orderly people, economical in their livings, and frugal in their expenses. They are plain and simple in their manners, and, on the whole they form perhaps the most pleasing and happy society in the world.

"Q. What are their diversions?

"A. Dancing is a favorite one of both sexes. Sleigh-riding in winter, skating, playing ball (of which there are several different games), gunning and fishing are the principal; gambling and horse-jockeying are practiced by none but worthless people, who are despised by all persons of respectability and considered as nuisances in society."

The pupils were expected to memorize this text word for word. No doubt our great-grandfathers would have been better versed in geography could they have had our present day text with its wealth of maps and illustrations. However, the textbook is not the only essential factor. A poor textbook in the hands of an enthusiastic teacher may produce excellent results. There has been a great tendency to routine work in this branch, and probably variety in the recitation is the needful thing in most schools. It is no longer the sole purpose to impart a knowledge of names, places, and boundaries, but to stimulate thought, and to give the pupils something of the many interesting and curious facts, some history, and some folklore, that no single textbook should or could contain. It is the teacher's duty to supply this interesting material.

Modern geography addresses itself to the youngest pupils. It is wrong to suppose that the child sees only his home and school. The sky is up above him with its sun, stars, and moon, its clouds, storms, and rain. He has seen the hills and mountains against the distant horizon. Trees, shrubs, and certain forms of wild-animal life are familiar. These things may all be described to him. For this is real geography, and presented in its relation to home and school surroundings, and, later to history, past and current, and to the various natural sciences, it is a source of unfailing interest. The recreations of which it admits are inexhaustible.

Supplementary reading in relation to geography may be mentioned as chief among the many recreations. Children like to learn of the conditions and surroundings of people in strange and distant lands; of occupations and manners of life unlike their own; of the natural features of countries

which present a strong contrast to the scenes with which they are familiar. Suitable books for this purpose, well adapted to interest and instruct, without bewildering the young pupil, can easily be obtained. There are many well-known poems which can be called to mind, referring to geographical locations; for instance: "A Meditation on Rhode Island Coal," by Bryant; "The Nadowessie Chieftain," by Schiller; "Through Minnehaha's Veil" and "My Merrimac," by Lucy Larcom; "The Jewish Cemetery at Newport" and "The Arsenal at Springfield," by Longfellow; "The Mammoth Cave" and "Seneca Lake," by Percival; "Bingen on the Rhine," by Mrs. Norton; "How They Brought the Good News," by Robert Browning, and countless others. "Childe Harold's Pilgrimage," by Byron will supply a series of beautiful poetical descriptions relating to places of historical interest in Europe. Narratives of travel possess a charm for young readers. When skillfully and naturally written, they abound in geographical information. Among the books in the school library should be some which throw light upon the subject of geography and afford entertaining and instructive reading. A suggestive list follows this chapter. The pupils should be encouraged to read at home and in their spare time at school. A few minutes of the recitation might be devoted to profitable discussion of the subjects read.

Imaginary journeys afford a valuable and interesting recreation, provided they are carried on in an interesting way. For instance, the journey by rail from New York to Chicago will suppose a passage through the gardens of New Jersey, the coal and iron tracts of Pennsylvania, the farming lands of Ohio and Indiana, and the lake shore of

Illinois. Much interest may be added by exhibiting samples of products from different localities, pictures of scenery, places and noted persons, by relating stories and anecdotes regarding prominent persons and places.

Some physical geography should be taught in all schools. Where there is not a regular class, it will be best to include this instruction in the general information lesson. The pupils should be taught the use of the thermometer and the barometer, and should have some understanding of the work of the Signal Service. The whole process of evaporation, cloud formation, and the precipitation of rain, hail, and snow, may be easily explained and illustrated by familiar examples.[1] The endless story of water circulation in nature is invariably interesting to children of all grades. In studying the climates of the various countries, attention should be given to climatic influences, not only upon the occupations, dress, and social habits of the people, but also upon their dispositions, their character, and their amusements. The pupils should learn something, too, of the formation of the earth's crust; the long period of time which has been required for the formation; when the successive forms of life appeared, and what they were. An interesting talk might be given regarding the location of common minerals and the forms in which they occur. Another interesting topic for discussion is the bottom of the sea, and deep-sea life.

In order that the pupils may understand poetical allusions, it will be well for them to learn the poetical names of

[1] A chart is issued by the U. S. Weather Bureau, Washington, D. C., illustrating the various kinds of clouds in colors together with a full description of each kind.

countries. Thus Wales is spoken of as Cambria; England, as Britannia; Scotland, as Scotia or Caledonia; Greece, as Hellas; Ireland, as Hibernia; Switzerland, as Helvetia; Spain, as Iberia. The following popular designations given to some of our states will also be of interest.

Alabama, Cotton State.
Arkansas, Bear State.
California, Golden State.
Colorado, Centennial State.
Connecticut, Nutmeg State.
Delaware, Blue Hen State.
Florida, Peninsula State.
Georgia, Cracker State.
Illinois, Prairie State.
Indiana, Hoosier State.
Iowa, Hawkeye State.
Kansas, Central State.
Kentucky, Blue Grass State.
Louisiana, Creole State.
Maine, Pine Tree State.
Maryland, Old Line State.
Massachusetts, Bay State.
Michigan, Wolverene State.
Minnesota, Bread and Butter State.
Mississippi, Bayou State.
Missouri, Bullion State.
Nebraska, Tree-planter State.
Nevada, Silver State.
New Hampshire, Granite State.
New York, Empire State.
North Carolina, Turpentine State.
Ohio, Buckeye State.
Oregon, Webfoot State.
Pennsylvania, Keystone State.
Rhode Island, Little Rhody.
South Carolina, Palmetto State.
South Dakota, Blizzard State.
Texas, Lone Star State.
Vermont, Green Mountain State.
Virginia, Old Dominion.
Washington, Evergreen State.
West Virginia, Panhandle State.
Wisconsin, Badger State.

Many American cities also have acquired humorous or poetic designations, which have become popularized throughout the country.

Boston, the Hub.
Buffalo, Queen of the Lakes.
Atlanta, Gate City of the South.
Chicago, Garden City.
New York, Gotham.
Pittsburgh, Smoky City.
Lowell, City of Spindles.
Detroit, City of the Straits.
Pasadena, City of Roses.

It will prove interesting to trace the derivation of geographical names. About half the states and territories of the Union have names derived from the language of the Indians, and the same is true of a great number of cities, towns, and counties. In thousands of instances the old Indian names are retained for mountains, hills, rivers, waterfalls, and other natural features. That many of these Indian names are decidedly picturesque and poetical in character is shown by their meanings:

Iowa, The sleepy ones.
Ohio, The beautiful.
Minnehaha, Laughing water.
Ontario, A beautiful lake.
Rappahannock, River that flows and ebbs.
Tennessee, River of the big bend.
Penobscot, It flows on the rocks.
Niagara, Neck of water.
Chautauqua, Foggy place.
Alabama, Here we rest.
Massachusetts, The blue hills.
Katahdin, The highest place.
Mississippi, The great and long river.
Saratoga, Miraculous water in a rock.
Roanoke, Smoothed shells.
Nebraska, Shallow water.
Minnesota, Smoky water.

Amusing accounts are given of the origin of some geographical names. An exploring party of Spaniards who passed the great peninsula at the south entrance to the Gulf of Mexico, made a brief landing to learn the name of the country. An inquiry was made of the first native they met, who queried, in turn, "*Juca tan?*" ("What do you say?") The investigators bowed and returned to the ship well-satisfied, reporting: "The natives say the name of this country is Yucatan." The peninsula has been known by this name ever since. It will be remembered that the name America was applied originally to this country in

error, thus giving to a merchant of Seville, Spain, the honor which should have belonged to Columbus.

If the teacher is a good artist, often a few skillful strokes of the crayon will fix outline maps of geographical divisions clearly in mind, by comparing them with drawings of various figures of similar shapes. Thus Italy is compared to a long hunting boot; France to an ice pitcher; New York to a lion; Virginia to a camel; Lake Ontario to a seal; Lakes Erie and St. Clair and the Adriatic Sea to a whale; the Sea of Japan to a rabbit; Corsica to a hand, New Guinea to a guinea fowl, and so on, depending upon the teacher's ingenuity.

Perhaps the best way to fix in the pupil's mind what he has learned is by the writing of compositions of his own which will call out all his knowledge upon a given subject, and cause him to make an effort to increase his stock of learning. Subjects for such compositions may be taken from all parts of the geography. The following titles will show what a wide range may be covered: "Down in a Coal Mine," "An Adventure in a Lumber Region," "Making Maple Sugar," "Farming in the West," "Salmon Fishing," "Some Noted Caves," "The Yellowstone National Park."

Excellent relief maps may be drawn upon the board. The teacher is referred to the relief maps in any good encyclopedia or geography for methods of constructing them. A little practice will enable the most inexperienced to produce a fair map. Modeling relief maps of clay or pulp will effectually fix in the mind the principal slopes, mountain ranges, and river systems. For various reasons, it may not be practical to work with clay in the schoolroom. Pulp is more easily obtained and may be preserved longer.

The following directions for making pulp maps may be of value to the inexperienced. Soak old newspapers over night, wring out and knead with the hands into a white pulp. Draw two maps of the size which you wish the pulp map to be, and procure a smoothly planed board one and one-half inches wider all around than the map. Next make a paste of cornstarch and a little powdered alum; mix carefully with a little cold water to the consistency of thick cream; and boil three or four minutes, stirring constantly. The board and paste being ready, soak one map and one sheet of cartridge or brown paper, same size as the map, in cold water till they are saturated. Take care that they lie perfectly flat. Remove the map and paper from the bath and carefully lay them upon a piece of muslin in order that it may absorb the superfluous moisture. Let them remain to expand about ten minutes. With your paste brush work the paste well into the back of the board and upon one side of the blank sheet of paper; mount the paper on the back of the board. (Be careful not to leave much paste upon the paper, work well into the pores.) Mount the map on the front of the board; it is a good plan to place a sheet of blank paper over the map and work evenly over the surface with a round rule, then leave the work to dry twenty-four hours. Next determine and mark on the map by tacks or pins, 1½ inches to ½ inch in length, the position and altitude of the chief hills, mountains, etc. Work a little gum arabic or glue over the map; let dry and then build up the principal mountain ranges with the pulp. Make the ridges irregular, and none so high as the first point. Tool out the valleys in the hillsides. Build the pulp in cones, keeping each point distinct, leaving

the valleys to be filled in after the modeling has become partly dry. In making the valleys, roll a piece of pulp half the width of the depression, then spread until it reaches the mountain sides. Now make the coast and coast line; roll out a long piece of pulp and run one fourth of an inch from the coast. Pressure of the fingers will make it approach the coast. Smooth the pulp down seaward where there are no cliffs, and blend in with the undulations of the land beyond. The rivers may be cut out with a knife, countries colored and borders marked, as desired.

Some teachers may prefer to make salt relief maps. These are made with about one pound of cornstarch and two quarts of salt. Moisten the starch with a very little water and heat the salt. Then mix the two together and bake until thick enough to mold. Roll in a damp cloth and set aside to be used as needed. (The hands should be kept moist when working with the mixture.) Draw an outline map on heavy cardboard. Cover with the mixture and put on the elevations; when done the map may be baked until dry, or it will dry of itself if left undisturbed twenty-four hours.

Another excellent kind of relief map is the sand map. To make this draw an outline on cardboard, and spread with a thin coat of mucilage. Sprinkle the mucilage with fine sand and work it in well. For mountains and highlands alternate mucilage and sand until the proper relation between highland and valley is secured. Dry in the sun. If the mucilage spreads beyond the outline, trim back with a knife.

Very pleasing relief maps can be easily cut from soft boxwood. The outline is first drawn on the board, and the rivers and lakes tooled out with a sharp knife or chisel.

When attractively colored and finished these maps add materially to the room decorations.

Map drawing should have a prominent place in all geography teaching. Pupils ought at least to be able to draw quickly from memory, fair outline maps of each of the grand divisions, their own state, county, and township. They should be able to locate the principal mountains, cities and rivers. One of the most successful methods of presenting map work is by a series of outlines, tracing and sketching.[1]

Much interest may be aroused in industrial geography, and probably there is no better plan than the comparatively new "problem" method. The wise teacher is on the lookout continually for pictures, references, and little odds and ends of information of every sort to further her work in the schoolroom. Suppose the geography class is studying about the states of the cotton belt. The teacher turns to the filing box[2] labeled "Industries." The envelope on "Cotton" contains enough material to fire the class with enthusiasm. Pictures may then be shown that illustrate the two ways of picking cotton (hand picking and machinery.) Pictures of cotton fields and of a single plant in all its stages of growth come next.

Problem:

How is the soil prepared for planting? (Compare the plows in use in the cotton belt with the plows in the corn belt). What conclusion is drawn concerning the soil of the cotton belt?

[1] For further direction on this point see McFee, *Outlines, Devices, and Recreations in U. S. Geography.*

[2] See the chapter on "The School Library" for suggestion regarding the filing of clippings.

Study a relief map of the cotton belt states. Note the coastal plain, with its rich soil, the slopes farther back from the plain, where upland cotton is raised; the drainage, importance of the large rivers in each section.

Study the climatic factors which influence the region. (1) The winds, their general direction. (2) Temperature and amount of rainfall (when needed and when detrimental to the crop); length of the growing season.

Study the maps of the cotton producing states as shown in Bulletin 107 (Department of Commerce and Labor).

Problems:

1. Why is so little cotton grown in North Carolina?
2. Why does the cotton boundary line include only the very southeastern part of Missouri?
3. Why are the western counties of Texas cut out?
4. Why is the northwestern strip of Oklahoma excluded; why are New Mexico and Arkansas "patchy"?

Examine samples of cotton; long staple and short staple, and sea-island, the best example of long staple cotton. Find where it grows. Talk about its rival, the Egyptian cotton. If possible, exhibit a few cotton bolls. The children clean out the seeds, and are then ready to appreciate the full value of the cotton gin,[1] and to regard with interest, not only pictures of the first gin and its inventor, but types of later machines. The teacher then propounds the query:

[1] It would take an average worker two years to remove the seeds from sufficient cotton to make a bale. In the old days, it is said that a slave's evening was spent picking a shoe full of cotton seed. The average gin turns out from five to fourteen bales daily. A bale weighs 500 pounds. It takes about fourteen hundred pounds of raw cotton to make a bale, so that nearly two thirds of the weight is seed.

"What use is made of cotton seeds?" This is search material for home reference.

Next comes the manner of baling cotton and the two shapes of bales. What is done with the cotton bales? Examine pictures that show transportation of cotton bales to the wharves and the railroad. Locate rivers in the cotton belt that carry cotton to the cotton mills.

Problems:

1. Discuss the cotton mills of New England. Why are there mills in this region so far from the cotton belt?
2. Which is the cheaper method of transportation, by rail or by water?
3. Why are we sending proportionately less cotton away from the United States each year?
4. The cost of growing cotton.
5. Menaces to the cotton industry.
6. The people engaged in cotton growing.

Close the study of cotton with a cotton program on Friday afternoon. The following is suggestive:

Songs:

"Nellie Gray."
"Old Black Joe."
"Dixie."
"Little Old Log Cabin in de Lane."
"Suwannee River."

Compositions:

"The Story of the Cotton Plant."
"Down the River to Memphis with a Cotton Bale."
"The By-products of Cotton."
"Eli Whitney and the Cotton Gin."
"Spinning in the Old Days."

"A Visit to a Cotton Mill."
"A Spool of Thread."
"Uncle Sam and the Cotton Industry."
"In the Cotton Fields Before the War."
"An Up-to-date Cotton Plantation."
"Enemies of the Cotton Plant."

Make a special effort to have the school patrons present. Display as many pictures and samples of cotton products as possible. In almost every neighborhood there are carefully preserved products of great-grandmother's loom. Have a special table for the exhibition. Endeavor to find some elderly lady who will bring her spinning wheel and show how the mothers used to spend their evenings.

In like manner, each section of our country yields material for scores of industry lessons. To the teacher once aroused, the problem will be not what to take up, but what to omit. Here are a few interesting and important topics:

The Wheat Belt of Our Country.
Where Corn is King.
Our Forests.
  (a) The Forestry Service.
  (b) Gifts of the Forest.
    1. Maple Sugar.
    2. Turpentine, Gums, and Rosin.
    3. Lumber and Fuel.
    4. Camphor, etc.
Fruits of the United States:
  (a) The Land of the Big Red Apple.
  (b) Where Pears Hang High.
  (c) The Fruit of the Vine.
  (d) Peach Areas of Our Country.
  (e) Where the Orange Grows.

A Visit to a Woolen Mill.
The Story of Silk.
The Story of Flax.
Where Coal is Mined.
Cattle and Dairy Products:
(a) On a Western Cattle Ranch.
(b) A Modern Dairy Farm.
(c) How Condensed Milk is Made.
(d) Making Fancy Cheeses.
(e) A Visit to a Packing House.
(f) Where Leather is Made.
(g) Making Boots and Shoes.
Where We Get Salt.
The Iron-Ore Districts of Our Country.
A Lead Mine.
In an Oil Field.
Uncle Sam's Money Factories.
Where Gold is Mined.
In the Sugar Bush.
Garden Spots of Our Land.
Borax Hunters.
Pearl Divers.
In a Paper Plant.
Uncle Sam's Fisheries:
(a) Oyster Beds of the Chesapeake.
(b) Where the Big Red Salmon Grows.
(c) Cod and Mackerel.
(d) Fresh-water Fishing Here and There.

A wise use of the stereopticon lantern is of great value to the geography class. (The teacher must take care not to do all the reciting.) In some states the Department of Public Instruction furnishes slides for this work. New York, for example, has taken special care in the preparation of slides showing the great industries, such as the manufacture of salt and steel, and the mining and

preparation of coal for the market. Small radiopticons which will throw the pictures on a screen from an ordinary photograph or postcard should be a part of every school equipment. The use of stereoscopes and views adds considerable interest. The children will vie with one another in bringing timely illustrations from the home collection. It is a good plan to assign a state, or a group of states, or country, to each geography pupil, and see which one can make the best collection of descriptive cards and pictures. A reward may be offered for skill in the mounting of cards and pictures on a specified size of heavy paper or cloth.

In conclusion: Geography teaching that does not make the pupils eager to find out all they can about this interesting old world of ours is a failure. Mere book study will not do this. The text is only the guide, and it is all the more welcome to be frequently lost from view. Remember to make the work practical. There is no end to what may be accomplished, if only the pupils are properly imbued with the spirit of interest and investigation. The travel instinct is born in nearly everyone; and we all like to journey about — if only in the imagination.

Suggestive Supplementary Books in Geography

For Primary Grades:

Andrews, Jane. *Seven Little Sisters.*
Carpenter, Frank G. *Around the World with the Children.*
Curtis, Alice T. *Story of Cotton.*
Dutton, S. T. *Fishing and Hunting.*
Fairbanks, Harold W. *Home Geography for Primary Grades.*
Hope, Ascott R. *The World* (Peeps at Many Lands Series).
Luther, Agnes V. *Trading and Exploring.*

Schwartz, Julia A. *Five Little Strangers.*
Shaw, E. R. *Big People and Little People of Other Lands.*
Wiley, Belle, and Edick, Grace. *Children of the Cliff.*

For Intermediate and Advanced Grades:

Carpenter, Frank G. *Geographical Readers: North America; South America; Europe; Asia; Africa; Australia* (six volumes).
Carpenter, Frank G. *How the World is Fed; How the World is Clothed; How the World is Housed* (three volumes).
Chamberlain and Chamberlain. *Geographical Readers.*
Frye, A. *Brooks and Brook Basins.*
Hope, Ascott R. *The World* (Peeps at Many Lands Series).
Krout, M. H. *Alice's Visit to the Hawaiian Islands.*
McFee, Inez N. *Boys and Girls of Many Lands.*
Rocheleau, W. F. *Products of the Soil*, and *Great American Industries.*
Starr, Frederick. *Strange Peoples.*
National Geographic Magazine.

CHAPTER XIII

PHYSICAL TRAINING AND HYGIENE

As the natural intellectual leader of a community, the rural teacher can do as much for public health in the country as the medical inspector and school nurses are doing in the city. In other words, the country school teacher should be a public health educator.

This seems a rather formidable undertaking. The average teacher has had little training throughout her school course for the teaching of physiology and hygiene. Sane presentations of the subject are both delicate and difficult. But after all it is not mere teaching of physiology that is needed. The nurses and medical inspectors in the cities do not do this: they merely *point the way to clean living.* Physiology enlightens the children regarding the functions of that most wonderful machine of all, the human body, but it does not protect them in any way against tuberculosis from contaminated milk or typhoid from impure water.

Far from being too difficult to teach in the common schools, the subject of public health can be made both interesting and understandable. "Personal cleanliness, purity of food and drinks, the nature of disease, and the method of transference are all things which can be expressed in the simplest terms and made clear to the understanding of children. Milk, its value as a food, the fact that it is highly appreciated by bacteria, and that it is

therefore necessary to protect it against them — these are not too difficult for the children."[1]

More and more we are coming to realize the truth of the old adage: "An ounce of prevention is better than a pound of cure." Mothers no longer voluntarily expose their children to mumps, measles, chicken pox, scarlet fever, and whooping cough, thinking it is better for them to have these diseases while they are young. At the same time many mothers through ignorance of preventive measures in the way of sanitation and the scientific preparation and care of food, still unintentionally expose their children to contagious and infectious diseases.

Remarkable results may be expected to follow adequate public health work by teachers everywhere, both in the cities and in rural districts. "In rural communities annually 400,000 persons die and about 2,000,000 others are seriously ill from infective diseases. If only one half of these deaths and cases of sickness can be eliminated, it means that an immense field of useful work lies at the hand of the country school teacher who will become a public health educator, and will instruct the children and the mothers and fathers how to prevent the transference of poisonous bacteria from those who carry them to those who do not."[1]

A small medicine cabinet should be a part of every teacher's equipment. Many teachers provide themselves with a bottle of peroxide, a roll of absorbent cotton, needle and thread, bandages, court-plaster, and adhesive tape. To these should be added three-ounce bottles of listerine,

[1] From a bulletin treating of sanitation in rural communities, published by the U. S. Bureau of Education.

castor oil, formaldehyde, turpentine, sweet oil, aromatic spirits of ammonia, sweet spirits of niter, and dry sulphur. A quart of limewater, a clay pipe, a roll of flannel, a small teakettle, and an alcohol lamp, are also valuable.

1. Listerine is excellent for gargle in cases of sore throat, and as a mouth wash.

2. Castor oil, in periodic doses, will permanently cure sour stomach and headache when hygienic habits are followed.

3. Formaldehyde is a simple sanitary remedy for sore throat and tonsillitis. Fifteen drops in a half tumbler of water and used as a gargle every half hour will speedily effect relief. Breathing the fumes of formaldehyde through the mouth will stop paroxysms of coughing. Even whooping cough can be held in check if taken in time.

4. Turpentine is well known as a preventive of tetanus or lockjaw. For tight cold on the chest, nothing excels a thorough greasing with sweet oil to prevent blistering, and then a generous application of turpentine, covering with a piece of flannel.

5. Sweet oil, besides in the use just mentioned, is a valuable adjunct in healing sore spots and bruises.

6. Aromatic spirits of ammonia is useful as a stimulant. It is also valuable in cases of acid dyspepsia, nervous or sick headache, and simple nervousness. Ten drops in a quarter of a tumbler of water is the dose for a child; for an adult a quarter of a teaspoonful in about a third of a tumbler of water. This may be given every fifteen minutes until three or four doses have been taken.

7. Sweet spirits of niter is useful in allaying fever. It promotes healthy activity of skin and kidneys and will often

loosen a tight cough. A teaspoonful should be put into a tumbler of water. The dose for a child is a teaspoonful of the mixture every half hour; the dose for an adult, one tablespoonful.

8. Dry sulphur, inhaled through a clay pipe, is excellent for ulcerated sore throat.

9. Limewater is excellent to settle a sick stomach. To prepare it, put a piece of lime the size of a hen's egg into a quart of water, and let it stand for a few hours. Pour off the clear liquid and bottle it for use. The dose is a teaspoonful in a small glass of water.

Many states now provide medical inspectors for country schools. These officers look after the physical defects of the children, unsanitary conditions of the school premises, and such menaces as unadjustable desks, dry sweeping, feather dusters, shiny blackboards, and the like. But they have no jurisdiction over harassing school discipline that wrecks the nerves, excessive home study and waste of time upon subjects of no value; nor can they do much toward instituting habits of right living. These fall entirely within the scope of the teacher. It is her business to inculcate habits of health that will tend to promote industrial efficiency in the after life of the child.

First, it will be necessary to awaken the mind to a keen appreciation of the need of a good body. This can be done by telling the children stories in which the care, cleanliness, and health of the body bear an important part. Aim to teach pupils so to care for their bodies, and to have such pride in their preservation, as to keep these beautiful in form, and the owners free from degrading habits. Several informal talks and stories should be given to the pupils

before making any attempt to introduce the subject proper.

Lead the pupils to an appreciation of the term *industrial efficiency*. Show that inefficiency results from chronic habits of unhealthy living. The user of alcohol will furnish the most apt illustration. Aside from the penalties suffered by himself and his family, he is a menace to society; he is unpunctual, wastes material, disobeys instructions, endangers others' lives, decreases the product of his trade and of his employer, lessens the profits of both, depresses wages, and increases insurance and business risks. Because no one can forsee when the "drop too much" will be taken, users of alcohol are not wanted in positions of trust.

It has been conceded that milder forms of unhealthy living interfere with industrial efficiency even more than alcoholism. Often men and women who have received thorough technical training fail to win promotion because of carelessness in personal habits. Their clothing is disorderly and often unclean, their breath offensive, and they have a decidedly unkempt appearance. They plainly show themselves to be the victims of constipation, headache, bad ventilation in the home, irregular meals and sleep, and improper diet. Too many night parties and nicotinism also leave their stamp. Always one pays by reduced efficiency for intemperance in eating, sleeping, or playing. In paying his employees for piece work, instead of by the hour, day, or week, the employer partially protects himself against uneven, sluggish, slip-shod workmen; but, other things being equal, his promotions are awarded to those who keep themselves up to the standard of excellence, for he

knows that the man who does even, steady work has the best earning capacity and deserves the best recognition.

Now comes the query, what general health habits should be observed by all? The following adaptation of daily, routine may be practiced:

1. Throw the bedding over the foot of the bed.

2. If the weather demands, close the window that has been open during the night, until you are ready to leave the room.

3. Bathe the face, neck, chest, crotch, and armpits. Finish with cold water. Give particular attention to the eyes, ears, and nose. If time and conveniences permit, bathe the entire body.

4. Cleanse the finger nails.

5. Cleanse the teeth, especially the places that are out of sight and hard to reach.

6. Breakfast punctually at a regular hour. Eat lightly and only what agrees with you.

7. Visit the toilet at a regular time.

8. Have several minutes in the open air, preferably walking.

9. Be punctual at work, and insist on a supply of fresh air in the workroom.

10. Eat punctually at the noon hour, and *enjoy the meal.*

11. Be regular, temperate, and leisurely in eating the evening meal; eat nothing that disagrees with you.

12. Spend the evening profitably and pleasantly and in ways compatible with the foregoing habits.

13. Retire at a fixed hour, making up for irregularity by an earlier hour next night.

14. Repeat 3 and 5.
15. Turn underclothes wrong side out for ventilation.
16. Open windows.
17. Relax mind and body and go to sleep.

These rules are, of course, for the adult. The teacher may well accept them as her own safeguard, and she will be able readily to adapt them for the use of the pupils. A few simple health rules may well be written upon the blackboard, or pinned up where all can read. The following are suggestive:

1. Health is wealth.
2. Breathe plenty of fresh air.
3. Do not put anything into your mouth except food and drink.
4. Keep your face, hands, and finger nails clean.
5. Keep the teeth clean, and the breath pure and sweet.
6. Avoid draughts.
7. Do not sit with wet feet or damp clothing.
8. Breathe, sit, stand and walk correctly. In so doing you will do more to prevent consumption than many physicians combined.
9. Go to bed early, rise early, exercise regularly.
10. Bathe frequently.
11. Do not overeat. Keep the bowel action regular.
12. Learn to use rightly and take proper care of every part of the body.

"A perfect body makes a chariot in which a heroic soul may well be proud to ride.[1]" The children realize this and are quick to see that if they learn the laws which govern

[1] Henry Ward Beecher.

the development of the body and its maintenance in a condition of health, and follow them, they will grow up strong and well. On the other hand, if through neglect or ignorance, they violate these laws, they will not have the strength which they might have had, and they will be more likely to contract disease. Each one should learn the substances which his body needs for its nutrition and work, and how it uses them; why he eats and drinks, why he exercises, why he needs pure air. The earlier this knowledge is acquired, the better, for it is in youth that the tissues are developing and taking their form, and any neglect of health laws may result in a permanent deformity of the body. Thus, a boy who interferes with the development of his tissues by the use of tobacco must carry these undeveloped parts all his life, as they cannot grow after the period of growth and formation is past. The child who, through poor food, becomes rickety (rachitic) and gets deformed bones, carries these bones to the grave. The girl who walks with bent shoulders while bones are forming will be round-shouldered for life, as the shape of the frame is fixed in youth.

"When once the child is taught the importance and language of movement, and the reflex action upon his character, he will no more shuffle his feet or slam the door than he will permit slang or profanity to pass his lips. First awaken in the man an appreciation of the necessity for a good body; then, practice, for the purpose of developing the physical being, becomes a pleasure. Boys can be won to earnest work by suggestions as to the importance of strength and manliness. They can easily be led to see the commercial value put upon a good form and courteous bearing by the business world. Tell them of the boy whose healthful, gentlemanly

appearance won him a position over a crowd of careless, slouching competitors. Girls are pleased with the attainments of grace and beauty, while all acknowledge the universal demand for health and good manners." [1]

An engineer or a mechanic may repair and improve his machine. We may, in like manner, improve our body-machines. By following certain rules in physical culture and training we may develop strength, poise, grace, endurance, what we will. Imbue the pupils with this idea; then take them into training. Nothing will arouse sluggish, inattentive, mischievously inclined pupils so quickly and effectively as a few minutes' drill in calisthenics, with the doors and windows opened wide.

First, develop the requisites for a graceful, well-poised body; learn to sit, stand, and walk correctly. The Greeks claimed that character is revealed by gait. We have often proved this true. Have we not determined a person's mood by the way he walks? And have we not in a great measure determined the character of a stranger by his bearing? Good walking is simply one perfect poise of the body following another in continued succession. It is one of the best of exercises. Emerson, who was an admirable walker,—light, erect, and strong of limb, once said that the strength of the sole-leather had gone into the fiber of the body, when the shoes were worn out.

The correct standing position is: head up, chin in, chest expanded, shoulders back and down, abdomen in, hips thrown back. If the body is in the right posture, it should be possible to see the toes by simply dropping the head without changing the position of the shoulders.

[1] Anna Morris. *Physical Education.*

Pupils should practice standing correctly until the muscular sense has become so accustomed to it that the body will feel uncomfortable in a stooping or crooked position. It is good practice to walk about with some light object, such as a bean bag, on the head. This is an excellent device for obtaining the correct position in stair climbing. *Never run upstairs.*

Try the following devices for poise and self-possession:

1. Position, letting the weight rest principally upon the balls of the feet. Rise as high as possible on the toes, then sink back to position. Repeat several times.

2. Advance the right foot its length, then rise high on the toes, settle the weight on the advanced foot, keeping up back heel; rise again on toes and change the weight to back foot, keeping up front heel, and so continue to alternate.

3. Advance the left foot and repeat 2.

4. Feet side by side, and squarely on the floor. Sway the body, changing the weight alternately to balls and heels. Don't raise the feet.

5. Without raising the feet, change the weight to the right foot, then to the left, and so alternate.

6. Incline the head obliquely forward to the right, and body obliquely to the left. Reverse, keeping feet on the floor.

7. Weight on both feet, rotate the body at waist line to the right, and head to the left. Reverse. Do not raise feet.

(Slow march music may be used if desired.)

The following exercises are restful when the pupils have been steadily employed at their desks:

1. Place a wand across the back, letting it run out through the bent elbows, rest the hands on the chest so as to press the arms and shoulders back, and march about.

2. Extend the left arm from the shoulder upward and grasp a dumb-bell. Lower the arm on the other side, and with this hand support a heavy weight.

3. Raise the arms high above the head, place the tips of the fingers together, and describe a half-circle toward the floor without bending the knees.

4. Take a weight in the hands and perform the hewing exercise, similar to the motions employed by the wood-chopper. Practice with the real article is highly desirable.

Dwell at some length upon the value of exercise and deep breathing. Following is a partial list of benefits to be derived from exercise and deep breathing:

1. The circulation is stimulated and the blood is enriched.

2. Headache is relieved.

3. The chest is enlarged, the form and size of the abdomen are improved.

4. Constipation and biliousness are cured.

5. Weak lungs are strengthened.

After practicing some simple breathing exercises, try the following exercise adapted to the tune of "Hail Columbia."

Position: Stand erect, hands at sides, fingers closed.

1. Inhale deeply through the nostrils during the first two measures.

2. Strike lightly upon left side of chest with right hand.

3. Strike lightly upon right side of chest with left hand.

4, 5, 6. Repeat 2 and 3 and 2.

Nos. 2–6 should be performed in two measures, while holding breath.

7. Exhale through the mouth during the fifth and sixth measures.

Repeat 1–7 until the tune is finished.[1]

What is the best exercise? That exercise which a person most enjoys is undoubtedly the best for him. But one should choose various forms so that the muscles throughout the body may be developed. Walking and running develop the muscles of the legs; rowing, the arms, back and legs; horseback riding, the legs and trunk. All vigorous exercise develops the muscles of respiration and the heart, and stimulates the digestive organs. Such games as basket ball, baseball, and tennis are excellent exercises. When out-of-door exercise is not possible, special exercises may be practiced to develop the muscles. Chest-weight pulling, dumb-bell and club swinging, in a well-ventilated hall or room, are splendid.

Girls may find good exercise in helping with the housework. But this, as well as special exercises, must be *conscious*. "Walking forms a large part of household exercise, and it is most necessary to do this correctly in order to reap its benefits. Always remember to hold the chin in and let the chest lead. Draw in the abdomen, and the shoulders will naturally fall into the proper place. Then, with deep breathing through your nose you will not run much risk of injury from housework. Remember to bend only at the hips; do not bend at the waist; this will give you a good poise, and keep your back straight. You can develop your figure just as well by means of housework, if

[1] James H. Smart. *Manual of School Gymnastics.*

you do it properly, as by a special system of physical culture. The movements used in scrubbing, sweeping, washing windows, bread-kneading, and bed-making, develop the muscles of the arm and chest and improve all this part of the body. Do not forget when ironing to apply the principle of double-sided development, which is an important point in all housework." [1]

The object of all muscular exercise is not to develop modern Samsons, but to attain perfection in intellectual and spiritual things. A man can use his mind more efficiently if he has good circulation and perfect digestion, and these things will be granted unto him if he but exercise sufficiently. Heaviness and inaptitude for work are common to people who do not take exercise enough to keep their circulation from becoming sluggish.

All the exercises necessary for the proper development of the body may be obtained from the use of a few simple contrivances, such as the Indian club, the wand, the ring, and the light wooden dumb-bell. There is, therefore, really no reason why physical training should not be a part of every school curriculum. In ancient Greece, physical exercises in the schools were prescribed and regulated by law. Some time we shall have advanced that far.

By application to the Commissioner of Education at Washington, D. C., many helpful booklets on school hygiene may be had.

Other valuable references are: Gulick, L. H., *Physical Education by Muscular Exercise;* Hancock's *Physical Training for Children by Japanese Methods.*

[1] Emma E. Walker. *Beauty through Hygiene.*

CHAPTER XIV

LITERATURE AND COMPOSITION

The importance of literature and composition in common schools cannot be overestimated, and yet college entrance examinations prove that attention to this matter is greatly needed. How many of our graduates are unable to write good English or to appreciate good literature!

"We teach a little arithmetic, a little geography, a little history, some spelling, reading, writing, a little of some of the sciences, and if we stop here we have done little indeed — ignoring the greatest and best of all that we might and should have taught. The teacher who fails to give a large share of time and attention to the careful memorizing, the study, and the enjoyment of fine things in literature is woefully at fault. The boy or girl who has been at school for six or eight years should go out into life with a wealth of good things in literature securely lodged in the memory, that shall mold his taste, give color to his thought, and influence his daily life." [1]

To acquaint the pupils with the best thought of man in its best form, to encourage the youths to make such thoughts their own, and come to love them and so to live them, ought to be the high purpose of all school teaching. "It is for you to so train the pupils that they can go to Tennyson and Shakespeare, Dante and Goethe, and get more pleasure out of it than from Lazare and its family. You

[1] J. P. McCaskey.

may have to introduce these things by way of a stepping-stone; but let your aim always be to get something worth while. Thus we may show them the literary power of their own experience, and teach them to express it with joy; we may open to them the inspiring literature of all time, so they will read with delighted appreciation; and all this helps to equip them for life, to bear its burdens and meet its sorrows and troubles." [1]

For a very long time it was thought almost universally that formal grammar was the true basis of all teaching of English. But now the wisest teachers agree that children cannot be trained to speak or write correctly by parsing according to Latinized formulas. They will never learn to construct a good sentence by analyzing complex or compound sentences, or by memorizing and repeating the rules of syntax, though this method be followed until they grow gray. Many great authors never studied the art of composition; but they read a multitude of the best books, and had the faculty of learning how to compose by studying the compositions of others, while at the same time they cultivated literary tastes and added to their stock of general information.

It is possible to teach children to express with joy and delight what is seen and felt. Too often written work is a task, when it should be a pleasure. The reason why the bare mention of a composition is sometimes enough to produce signs of rebellion in an ordinarily obedient school, is because the pupils do not know how to go about writing it. It is as though they were ordered to build a steam threshing machine, or to prove that the moon is inhabited. They

[1] Blaisdell.

have not the ability to express what few ideas they may have upon the subject given. There is a feeling of helplessness that comes from lack of practice or lack of interest, and their best work appears to them crude and incomplete.

Composition work should be gradual and systematic. There are various exercises which may precede and introduce the work of purely original composition, and which are so interesting that the pupils will regard them as recreations. Among these are exercises in making abstracts, outlines, amplifications, and paraphrases, the more simple of which should engage the attention of the younger pupils especially. Some illustrations of these forms are given here, as suggestions to the teacher:

The Abstract. An abstract is a condensed form of the work of another. It should contain in substance all the principal thoughts and events of the original, but should be expressed in shorter form, omitting many details. At first it is best to read a short, pointed story to the pupils, and have them prepare their abstract from memory. The familiar and true story which Cowper tells of John Gilpin affords an excellent exercise in making abstracts. While told at considerable length, it may be condensed into the following brief narration:

"John Gilpin was a well-known merchant of London, and a captain of the militia. When he had been married twenty years, he agreed that all his family should celebrate his wedding day by going to Edmonton, a few miles away, and taking dinner with him at a hotel called "The Bell." His wife, with the three children, her sister, and her niece, went in a carriage. Mr. Gilpin was to ride behind, upon a horse which he had borrowed from his friend, a calender (or finisher

of cloth) by trade, who lived ten miles from Edmonton. He was delayed in starting by waiting on a customer at his store. He set out at length wearing his long cloak, and a leather belt, to which he fastened two jugs of wine which his wife had forgotten to take. He was not used to horse-back riding, and could not manage the horse. Fearing he should fall, when it began to gallop he seized hold of its mane. This caused it to run all the faster. Mr. Gilpin's hat and wig blew off, and then his cloak also, for the loop which tied it broke. The jugs were thrown violently upward in the gallop, and broke, the wine falling upon the horse and causing it to run still harder. The gatemen along the road opened the gates for Mr. Gilpin to pass, thinking he was running a race. From the hotel porch Mrs. Gilpin saw him going by with great speed, and called to him, but he could not stop. The furious ride continued until the house of the calender was reached. That gentleman brought out his own hat and wig for Mr. Gilpin, and encouraged him to ride back to Edmonton. Just then a donkey brayed, and the frightened horse started back to London with its rider. The calender's hat and wig blew off at once, for they were too large. Mrs. Gilpin, in alarm, had sent a boy on a horse after her husband. The boy met him coming back, and, turning around, tried to overtake him. This chase led people to think Mr. Gilpin was a robber, and several horsemen began to pursue him with loud cries. The gatemen all thought as before, that Mr. Gilpin was riding a race, and threw the gates open before him. The chase never ceased until the poor man was carried by the runaway horse to the store in London from which he first started. Mr. Gilpin's unhappy wedding day was the subject of much sport to his acquaintances." [1]

In preparing an abstract of long selections, care must be taken to emphasize the parts of the story in the order of their importance. The pupils should tell the story briefly

[1] From C. W. Mann's, *School Recreations and Amusements.*

and clearly in their own words. Among the poems suitable for this purpose are: "The Blind Men and the Elephant," by Saxe; "The Lord of Burleigh," and "The Lady of Shalott," by Tennyson; "Cobbler Keezar's Vision," and "King Solomon and the Ants," by Whittier; "The Village Blacksmith," "The Slave's Dream," and "Paul Revere's Ride," by Longfellow; "Lady Yeardley's Guest," by Preston.

The Outline. An outline differs from an abstract in that it includes merely the headings of the different parts of the story or poem. Usually a selection will naturally divide itself into three parts — the introduction, the story, and the conclusion. If the selection is long, these principal divisions may be divided into subheads. Only short stories or poems should be given to beginners. As an example, here is an outline of "The Schoolmaster's Guests," by Will Carleton:

I. The Introduction:
    1. The master.
    2. The pupils.
    3. The room.

II. The Story:
    1. Arrival of district fathers.
    2. Object of their visit.
    3. Complaints made by the spokesman.

III. The Conclusion:
    1. Jim's trick.
    2. Abrupt ending of the complaints.
    3. Mirth of the school.
    4. Departure of the irate squires.

Amplification. Amplification is the expansion of the author's thought, and is of great value as it leads directly to original composition. Care and thought are required for its preparation, because it implies the addition of facts or incidents that are not really in the story, and these must be in harmony with the rest of the selection. The pupil should master the story, noting the order and relation of all the principal points. He may then supply all the incidents that would have been likely to occur, and form the whole into a connected story, avoiding as far as possible the use of the author's words. At first, simple sentences should be used; later on, paragraphs; and finally, poems or other connected narrations. Short poems often afford the best exercises for amplification, and many may be taken from the works of Longfellow, Whittier, and Saxe. The following passages from Whittier's "Snow Bound" will illustrate.

The old familiar sights of ours
Took marvelous shapes; strange domes and towers
Rose up where sty and corncrib stood,
Or garden wall, or belt of wood;
A smooth white mound the brush pile showed,
A fenceless drift what once was road;
The bridle post an old man sat
With loose-flung coat and high cocked hat;
The well curb had a Chinese roof;
And even the long sweep, high aloof,
In its slant splendor seemed to tell
Of Pisa's leaning miracle.

. . . . . .

Shut in from all the world without,
We sat the clean-winged hearth about,
Content to let the north wind roar
In baffled rage at pane and door,

While the red logs before us beat
The frost line back with tropic heat;
And ever, when a louder blast
Shook beam and rafter as it passed,
The merrier up its roaring draught
The great throat of the chimney laughed.

. . . . . .

The house dog on his paws outspread
Laid to the fire his drowsy head,
The cat's dark silhouette on the wall
A couchant tiger's seemed to fall;
And, for the winter fireside meet,
Between the andirons' straggling feet
The mug of cider simmered slow,
The apples sputtered in a row,
And, close at hand, the basket stood
With nuts from brown October's wood.

The sky had been gray and heavy for several days, and when the wind veered to the east, Uncle Moses, who was skilled in reading signs, foretold a heavy snowstorm. Before our early bedtime came, his prophecy proved true. The wind blew a perfect gale, drifting and piling up the snowflakes as they fell. The window frames were soon heaped with snow, and through the glass the posts of the clothesline looked like tall and sheeted ghosts.

All that night and the next day the storm raged, and, when the second morning dawned bright and clear, we looked out upon a universe of sky and snow. Instead of our old familiar sights, we saw strange domes and towers where the woodpile, garden wall, pigpen, and corncrib stood. The trees and barn roofs were weighted with snow, and the old brush pile looked like a huge mound. The road was drifted so full that there was not a fence post in sight on either side. Our old bridle post, near the garden gate, resembled an old man in a high cocked hat, with his cloak gathered

loosely around him. The well curb had a Chinese roof, and its long slanting sweep reminded us of the leaning tower of Pisa.

It was bitter cold, and we spent the day caring for the suffering animals, shoveling snow from the burdened roofs, and making paths. We worked with a will, but were well content when the twilight of the short December day left us free to gather about the clean-winged hearth. We were shut in from all the world, and the north wind roared in baffled rage at the doors and window frames. But it mattered little to us how the night behaved, for the red logs glowed cheerfully before us, and, when a louder blast shook the beams and rafters, the great throat of the roaring chimney laughed more merrily than ever.

We presented a picture of cozy, quiet cheerfulness before the fire that night. Our schoolmaster was with us, and had signified his willingness to read aloud from Burns. This was sufficient to drive us boys delightedly into the chimney corner, where we curled up on the floor close beside our Uncle's bench. Father, thoroughly tired after his day of care, nodded drowsily in his armchair near mother's swiftly turning spinning wheel. Our grave elder sister, Mary, worked busily at her patchwork. Old Bose lay close beside her with his drowsy head on his paws, starting fitfully, every now and then, as he dreamed of some lost sheep buried in the snow; while the house cat rubbed gently against Aunt, mutely beseeching her to lay aside her shining knitting needles. On the braided rug before the fire, sister Elizabeth, the youngest and dearest, carefully watched the row of roasting, sputtering apples. A mug of cider simmered slowly between the andirons' straggling feet, and near by on a stand, convenient to us all, stood a large basket of nuts. Small wonder that all the snow and wind could not quench the cheerfulness round our hearth fire's ruddy glow!

Paraphrasing. A paraphrase is a translation of the thoughts of another into language of our own. It assists the

pupil to get the author's meaning and emphasizes the choice of right words and the value of clearness and proper arrangement. Select a sentence of Disraeli, Besant, or John Henry Newman, and have the pupils paraphrase it as a means of calling attention to the strength of the sentence itself. Poems may be paraphrased to illustrate the difference between the language of poetry and that of prose.

Letter Writing. At the present time, letter writing may almost be classed among the lost arts. In the days of our grandmothers, school girls did not sit down with a large book on their knees for a desk, and dash off stray thoughts with a stub pencil on any kind of paper. We would not wish to revive the elegant letter writing of former days or the formality of the old-time correspondence between members of the same family, but we would advocate teaching the pupils to write neat, entertaining letters, expressed in good English. The letters of Cowper, Thackeray, Franklin, Lowell, and Motley, may profitably be read by teachers and pupils. For a study of style, the student of literature will find Andrew Lang's *Letters to Dead Authors* especially valuable. In a number of these letters every idiosyncrasy and personal trait of the dead author's style is cleverly imitated.

Composition Proper. Among the earliest forms which the pupil may profitably take up are biographical, historical, and geographical sketches. Here books of reference are necessary, and the teacher should guard against the pupils' copying. Many pupils give no thought to the fact that they are deceiving or injuring no one but themselves, and make fairly readable compositions by skimming and uniting the thoughts of others. Descriptive

composition comes next in line, and teachers will experience no difficulty if pupils are asked to write about familiar things. To be successful in description the pupil must be able to observe closely. With advanced pupils, a study of objects that are similar or are intimately related, with a view to finding out their differences, will be found valuable in preliminary work. They may also study and analyze passages chosen from Ruskin, Dickens, Macaulay, Scott, and from other masters of descriptive prose. Romance writing should not be attempted by beginners in literature. Teach the pupils that the test of romance writing is not that it be true, but that it be possible and consistent. This principle should be the guiding one in the formation of the plot. After the plot is constructed, the setting may be determined — for upon this its successful development will depend. When all these questions are settled, the action of the story may begin. Endeavor to make the first sentence so interesting that it will attract attention, and show the traits of the characters by their action and by their conversation, rather than by narrative. Be sure to stop when the story is told. For beginners the subject should be simple and well-known. The plot should not contain too many incidents, or any feature that is clearly impossible.

The subjects mentioned in this chapter have been suggested as examples rather than with the idea of presenting anything like an exhaustive treatment of literature and composition. But little has been said of the prime purpose of all English work — the cultivation of a taste for literature. However, a pupil will rarely be found who, while able to express himself clearly and intelligently, is

yet unable to appreciate whatever is best in literature. Some teachers will exclaim that they have little or no time for such work. They should make time. If they were to give a morning each week to literature and composition, and to this alone, permitting nothing to interfere, they would soon find it the very best of school work.

CHAPTER XV

THE SCHOOL LIBRARY

"No one thing," says Horace Mann, "will contribute more to intelligent reading than a well-selected school library." It is a necessity in every school. By daily companionship we learn the right uses of books; we soon come to regard them as dearly loved friends for whom we would sacrifice a great deal. Think of the great men who have gone without the necessities of life that they might buy books! "Nothing is so unhomelike as a bookless home, unless it is a house whose books betray a vulgar and narrow conception of life. A man's books form an average portrait of himself. Without books, a merchant's palace becomes but a prison; the trail of the upholsterer is over it all; while a small library well-selected may, like Aladdin's lamp, turn the abode of poverty into a princely home."

Through reading, the child's horizon is widened at a very early age. He is brought into contact with the great world in which he has to live. As an educational agency, reading is of the very greatest importance. The leading idea is to fill the child's mind with a love for good, true literature, and so train his mind that he can discriminate between the good and the bad, that he will naturally reject all that is worthless. There is nothing a teacher can do for his pupils to more advantage than to teach them the proper use of good books.

In selecting school libraries, great care should be used in the choice of books. There is much of the so-called juvenile literature that is not fit to put into the hands of the child. The children should early be introduced to such authors as Hans Andersen, the Grimm brothers, and Charles Kingsley. Later on they will enjoy Longfellow, Whittier, Irving, Dickens, and others. There are many writers of later date that never fail to interest children. Kate Douglas Wiggin, Alice Hegan Rice, "Pansy," Olive Thorne Miller, James Otis, C. A. Stephens, and Margaret Sidney are but a few of the many who have become favorites.

It is not enough to select good books and place them within reach of the pupil. The books should become a part of the life of the schoolroom. They should be used to stimulate and direct the intellectual growth of the children. Mere handing of books to the pupils by the teachers will not do. It deprives the children of the knowledge of the use of books. Besides, the teacher, by this passive process, cuts herself off from one of the best ways to understand the child's nature, and deprives herself of a vast amount of material for good work.

Books have three main uses; to amuse, to instruct, and to develop mind and character. The teacher should be thoroughly acquainted with every book in the library, so that she may know in what kind of work she can best use each one. Books that are intended merely to amuse are not so useful in the school as in the home, unless they are properly handled by the teacher. Almost any work of fiction may be used as a basis for reading, spelling, and language work. Many of them are valuable in connection

with history, geography, and general knowledge of the world. It is a poor story that cannot be used to instruct as well as to amuse, and a story that has no ethical value is to be avoided in school libraries.

For instance, the boy reads *On Fighting Decks in 1812*, by F. H. Costello. To be entertained, he should be allowed to enjoy it thoroughly; but the teacher can make it serve to strengthen his school work without destroying his pleasure. Let the pupil be led to describe:

(1) The wrecking of the sailboat.
(2) The character of the coast of Maine.
(3) The rescue of the frigate "Constitution."
(4) Description of the frigate.
(5) The fight of the "Guerriere," and "Java."
(6) Experience in fighting pirates.

Now let the teacher lead the boy from the fight with the pirates to the object of the pirates, the results, the cause of the battles, and so on. When this is thoroughly done the boy will have a fair knowledge of the War of 1812, and will not realize that he has been actually studying history.

Beautiful Joe, by Marshall Saunders, affords enjoyment and will teach pupils to treat animals kindly. The teacher can obtain a fund of material in this little volume. The children may be allowed to form a "Band of Mercy"; devote a part of a Friday afternoon each month to this work. Let them tell or write stories of their own experience, encourage them to read others, and in every way develop the spirit of kindness to animals.

Books of history and travel will impart a general information besides being very entertaining, for, to the child, truth is stranger than fiction. In these books, the teacher

will find a whole world of fact and fancy to lead the pupil through. History and geography may be made more interesting to the pupils by a course of general reading judiciously directed by the teacher.

Poetry is chief among the forms of literature which develop the imagination and the spiritual nature. The child will get more pleasure and understanding from it if he first hears it read well. Narrative poetry is the form best adapted to interest children in this kind of literature.

(1) Read the poem to the children.
(2) Get them to describe what they see with the mind's eye.
(3) Help them to catch the feeling and spirit.

Illustration.— "The Life of a Dewdrop," by Emily Rowe. Pupils may be led to answer the following questions:

(1) Of what is a dewdrop made?
(2) Where does the dewdrop come from?
(3) Why does it collect upon the grass and flowers?
(4) How did the dewdrop change?

If the teacher is familiar with the contents of the school library, however small it may be, she can bring up reinforcements in the way of pictures, sketches, and the like, that will enrich the whole course of the pupil's school life, and create a love for the beautiful and the true, which will materially affect his life afterwards.

In a great many of our country and village schools there are no libraries. It is in the hands of the teachers to remedy this fault. In some of our states the school boards are allowed a certain sum yearly for library purposes. In districts where the directors have not taken advantage of

this law, the teacher should remind them of their duty. There are many ways in which the teacher and pupils can coöperate to earn a library. The following suggestions may be helpful to those who wish to start a library or to increase the one they have:

(1) First, every school should subscribe for as many really good papers and magazines as possible. The teacher will find endless ways to make these useful. And the resourceful teacher will not be troubled about the money to pay for the subscriptions. A freewill offering of five cents per month, possibly less, from each family would do it. The children will delight in earning money for such a purpose. And the papers themselves would be a fine foundation for a library. We shall see later how this may be managed.

(2) Have entertainments; restore the old-time exhibitions. Charge a suitable admission, being sure to have it understood that the proceeds are for a library.

(3) Pupils may be encouraged to do work for the school that the Board usually hires done, such as cleaning the schoolhouse, mowing the lawn, sawing wood, and so on. In one school, the teacher and the boys sawed the year's wood and used the money to purchase school songbooks.

(4) In the summer time, ice cream socials, strawberry festivals, and the like, are quite sure to be well patronized. In the winter, chicken pie socials and oyster suppers will prove equally attractive.

(5) When interest in the school library has been sufficiently aroused, allow the pupils to solicit subscriptions. Encourage them at all times to be on the lookout for chances to increase the library fund.

(6) Write to the Bureau of Education for a list of their publications. Also get as many as possible of the Farm Bulletins; there is scarcely a one of these that cannot be made vitally interesting to the country pupils. When the farm boys and girls realize the interest and importance of the country, life will grow incomparably broader and richer and the city will have fewer attractions.

(7) Send some postal cards to the manufacturing companies. They publish a wealth of industrial information, and are glad indeed to send their literature into such a broad advertising avenue. Here is a list of subjects for composition, suggested from a page of advertisements:

A Cup of Chocolate. A Spool of Silk.
American Porcelain. Making Pocket Knives.

(8) Canvass the neighborhood for papers and magazines. Procure a liberal supply of heavy manila paper, needles, coarse thread, scissors, pen and ink, a bottle of library paste, pasteboards, some large envelopes 8½ by 11, and a quantity of pasteboard boxes. The latter should be uniform in size and large enough to accommodate the big envelopes. Get some handy boy to make a frame for the boxes. A convenient frame contains thirty-six boxes, arranged in tiers of six.

Now let the teacher go through the papers and magazines with a blue pencil, marking such stories, articles, and items as she thinks may be helpful and interesting. Pupils may clip and assort these. In the case of continued stories and long articles, simply tear out the pages, and arrange in consecutive order. For example, suppose one of these stories is "Penrod and the Pageant," from an old magazine. Assemble the pages, and place them inside a

fold of manila paper, cut just a trifle larger. Sew along the left margin, being careful to fasten the ends securely. Now let some good penman write the title and the author's name on the cover page:

PENROD AND THE PAGEANT
by
BOOTH TARKINGTON

and the first "book" is ready for the library.

After the "books" are bound and shelved, attention may be given to the other clipped matter. Label the boxes "United States," "Foreign Countries," "Industries," "The Months and Special Days," "Trees," "Animals," "Flowers," "Birds," "Authors," "Literature," and the like. For example, imagine the box marked "Foreign Countries" open before you: Take a bundle of envelopes, labeling them "England," "China," "Japan," and so on. Page clippings and others of large size may be indexed on the proper envelope, folded, and slipped inside. Here are some subjects chosen at random from the envelope devoted to "Japan" in my own book of "Foreign Countries": Animals of Japan, Japanese Life and Legends, The Japanese School Boy, A Japanese Home, Illustrations. The illustrations are in a smaller envelope, and comprise a veritable mine.

Catalogues, government bulletins, and pamphlets may be filed entire, or shorn to school use, if space is limited. Short articles and items should be pasted on cardboard before filing. In this way a valuable reference library may be accumulated, a little at a time. Its resources and possibilities are unlimited. Composition writing could never

be a bugbear in a schoolroom thus richly endowed, and think of the "helps" in literature, history, and geography, not to mention the bond of interest established between school and home!

Let the interest in the library once be started, and it is surprising how many ways and means pupils and patrons will suggest to enlarge it. In a certain school, the library has grown to more than one hundred volumes, through the untiring efforts of pupils, patrons, and teacher. They are greatly interested in the work and are now making preparations for another entertainment. One old lady said she had read every book in the library, and she hoped they would get some more soon.

The library affords an excellent avenue for reaching the parents. They will naturally wish to read the books they hear their children discussing at home, and thus pupils, parents, and teachers are drawn closer together by a common interest. The teacher we have mentioned as instrumental in securing songbooks for his school read *The Hoosier Schoolmaster* to his pupils by way of sowing library seed. Before he was half through the book, the pupils began to bring in requests to borrow it. The book then made the rounds of the neighborhood, followed closely by others, until a library in District Number 10 was the thing most earnestly desired.

CHAPTER XVI
NATURE STUDY

Nature study in the schools is a vital factor in the prime motive in education: character building. It has for its aim:

1. To develop the child's higher nature.
2. To increase his happiness.
3. To broaden his horizon by making him better acquainted with his physical environment.
4. To prepare him to appreciate the literature that nature has inspired.
5. To develop a sympathetic interest in living things.
6. To develop his intellectual powers.
7. To lead him to love nature and the Author of nature.

Many teachers, fully realizing the importance of nature study, still merely skirt the subject. Why? They have had no special training and fear to take hold of the work. Let those who hesitate read Phoebe Cary's delightfully inspiring poem "The Book of Nature," and turn to the abundance of choice material which the Creator has provided in every locality. For, after all, personal observation is the best teacher, and there are the pages of Burroughs, Gibson, Bryant, Olive Thorne Miller, and scores of other delightful nature lovers to turn for guidance, when inspiration and enthusiasm flag. The teacher with a real love for nature in her heart need not fear failure. She has

but to arouse a genuine, sympathetic interest in the children and start them upon little investigating tours to discover many of nature's secrets. Undoubtedly the teacher will be most successful with subjects which appeal most forcibly to her personally, but she must keep timeliness in mind, remembering that 'all things by season seasoned are.'

Material in the first three or four grades should be chosen with special reference to the culture of the child's higher life. Perhaps nothing in nature has power to delight children and concentrate their thought so quickly as the habits and activities of animals. Flowers and plants, however, have the advantage over animals in the fact that all stages of development can be studied at the same time, and they are, as a rule, more easily obtained and more easily cared for. The awakening seeds and unfolding blossoms have special attractions for the children, and they are also beautifully adapted to cultivate a sympathetic interest in nature. In addition to the study of plants and animals, such forces as water, air, and sunlight should receive special attention.

Pictures and related literature are invaluable in supplementing nature study. The teacher who would lead her pupils to see, to enjoy, and to love nature, must dwell with the poet and the artist as well as with the scientist; she must learn to appreciate something of the beauties they saw on every hand and to enter into the joy of their portrayal.

Try appealing to the artistic and poetic side of the child's nature by reading bits of prose and verse describing scenes in nature. Question pupils to make sure that they have a

clear mental picture of the scene portrayed. The following verses will illustrate:

In the oldest woods I know a brooklet,
That bubbles over stones and roots,
And ripples out of hollow places,
Like music out of flutes.

There creeps the pungent breath of cedars,
Rich coolness wraps the air about,
Whilst through clear pools electric flashes
Betray the watchful trout.

I know where wild things lurk and linger
In groves as gray and grand as time;
I know where God has written poems
Too strong for words or rime.[1]

Other nature poems that appeal to children are:

"The Wild Geese" and "The Sandpiper," by Celia Thaxter.
"The Throstle" and "The Brook," by Tennyson.
"St. Martin's Summer" and "The Last Walk in Autumn," by Whittier.
"The First Bluebird" and "When the Green Gits Back in the Trees," by Riley.
"March" and "The Daffodils," by Wordsworth.
"Easter Dawn," by Lucy Larcom.

Encourage the children to commit choice verses to memory and to render them with expression. Read them selections from Burroughs's *Wake Robin*. Rufus Choate attributed much of his power as an orator to the habit formed when a boy, of reciting the most beautiful passages from everything he read.

[1]Maurice Thompson.

Spring Nature Study

The teacher who cannot find in the unfolding buds of spring, the fresh-awakened flowers, and the joyous bird songs, material for a myriad of nature lessons has indeed missed her calling. Begin with the most obvious thing: the signs of spring. Get expressions from the children as to why they know it is spring.

> The bluebird chants from the elm's long branches,
> A hymn to welcome the budding year.
> The south wind wanders from field to forest,
> And softly whispers, "The Spring is here." [1]

Ask the pupils to bring in poems of spring. Read and discuss such poems as:

"The Voice of Spring," by Mrs. Hemans.
"Between Winter and Spring," by Lucy Larcom.
"The Voice of the Grass," by Sarah Roberts.
Selections from *Signs and Seasons*, by Burroughs.
"Spring," by Celia Thaxter.
"Rollicking Robin," by Kate Upson Clark.
"Buttercups and Daisies," by Mary Howitt.
"The Bluebird," by Eben Rexford.

The last four selections should be memorized.

THE WIND

Study the parts in nature played by the wind and the rain.

1. At what time of the year does the wind blow most?
2. Of what use is the wind?
   (a) It melts the snow and dries up the mud.
   (b) It blows up the rain clouds.
   (c) Later, it scatters the pollen.

[1] William Cullen Bryant.

"The Wind," by Stevenson, "Ulysses and the Bag of Winds" and "The Four Winds," by Andersen, are interesting selections to accompany the study of the wind.

THE RAIN

1. When do we have the most rain?

2. Of what use is it? (To help melt the snow, to bathe and purify the earth, to warm the ground, to soak into the waiting seeds, and to help the plants grow.)

3. Where does the rain come from?

There are many good "rain" poems:

"Who Likes the Rain?" by Clara Bates.
"Rain Songs," by Dunbar.
"The Rainy Day," by Longfellow.
"The Rain Song of the Robin," by Kate Upson Clark.
"The Rainbow," by Frank Dempster Sherman.
"The Rainbow," from "The Song of Hiawatha," by Longfellow.

FLOWERS

1. Have the pupils name the first spring wild flowers.

(The earliest are hepatica, bloodroot, Dutchman's breeches, spring beauty, anemone or windflower, trillium or wake-robin, and violet, in the order named. If possible, teach pupils to know each of these flowers.)

2. Bring in poems about flowers.

3. Make lists of well-known spring flowers.

4. Study various flower shapes. Develop the terms: corolla, petals, calyx, stamen, pistil, pollen.

5. Of what use is the pollen? Discuss the different ways in which it is scattered.

6. Why do so many flowers have bright-colored petals?

7. Why do flowers have perfume?

Tell the legend of the narcissus, the hyacinth, the iris. Ask the pupils to bring in flower legends in poem and story. Grow plants and bulbs for observation.

Memorize "The Windflower," by Lucy Larcom.

Readings:

"The Star That Became a Lily" and "The Pea Blossom," by Andersen.

"To the Dandelion," by Lowell.

"Jack-in-the-pulpit," by Clara Smith.

References:

Little Flower Folks, by Mara L. Pratt.

Flowers and Their Friends, by M. W. Morley.

How to Know the Wild Flowers, by Mrs. W. S. Dana.

THE TREES

A series of preparatory talks should pave the way for field work with the trees. The following topics are suggestive:

1. What the tree is.
2. The work of the leaves.
3. How trees grow.
   (a) What happens to the tree if the heartwood is injured?
   (b) What if the sapwood is injured?
   (c) Why do trees die?

The three important parts of the tree, roots, trunk or stem, and leaves should be taught. Altogether a tree is made up of earth elements, water, and buoyant, invisible gases. If we burn a stick of wood in the open air, these are released. The gases pass off, the water goes up in invisible steam, and all that is left are the ashes. The ashes never comprise more than one tenth the weight of the original timber.

The leaves are the magicians who constructed a strong and sturdy tree of these materials. Each leaf besides being a breathing organ is a tiny factory in itself, devoted principally to the manufacture of starch. It obtains raw materials from the air, and from the moisture which the roots obtain from the soil. The sun furnishes power. The machinery is the soft green leaf pulp, called chlorophyll.

The stem has regular avenues leading from the roots to the leaves and back again. Raw material travels in some, and life-giving sap in others. The upward routes are by way of the youngest fibers of the sapwood. Return trips are made through the inner bark or cambium.

This cambium is made up of millions of cells, which grow and divide into others as long as the food supply lasts. Thus each cell may increase to two, four, eight, sixteen, and so on. In this way a new layer of woody tissue and one of bark is built up each year by the cambium, adding to the girth of the tree. But the cambium never adds to its own width. It remains always a thin layer of dividing cells, constantly adding to the bark on one side and to the wood on the other.

The tree grows taller by means of the green shoots on the terminal branch. Cell division is the most rapid in these green shoots. Because of the chlorophyll in them they can make their own food, independently of the leaves. And the cambium cells in them have the power to *lengthen* as well as to thicken the stem. This power is lacking in the cambium cells of the trunk and yearling branches. So the shoots grow by leaps and bounds.

4. The Sleep of the Trees.

Among Green Trees, by J. E. Rogers; *A Year among the Trees* by W. Flagg; and *Familiar Trees*, by F. S. Mathews, are useful reference books.

Now the pupil is ready for intelligent study with the trees themselves. Note their appearance in early spring.

1. The sap.
   (a) Its use to the tree.
   (b) Its use to man: maple sugar, turpentine and pitch, gums, and so on.
2. The swelling buds.
   (a) Their arrangement on the twigs.
   (b) The three kinds—flower, leaf, and mixed buds.

How wonderfully Nature does up her packages! Each bud is wrapped in layers of scales, securely gummed together, and the whole given a coat of varnish, that it may be safe from the elements. As a further precaution some buds are carefully lined with fur, others with cotton or with tiny plant hairs. Sometimes in place of scales there is a nice little brown cap tightly fitted over the bud. Sycamore buds have such caps, neatly covered on the outside with fine hair. Some of the little caps are quite pointed. They contain leaf buds. The others have both leaves and flowers, and are plump and rounded. The willows, too, wear caps, or leathery hoods, all made in one piece and lined with silvery fur. The buds of the wild cherry are slender and pointed, and each sits upon a little shelf. Butternut buds also occupy a shelf, and over them is a hairy ridge, much resembling a pair of eyebrows. They are perhaps the oddest of all buds. Their pungent odor and general clamminess would reveal their identity in the dark. Black walnut buds are clothed in rich gray velvet. Those of the beech taper to delicate points, and are wrapped in scales thin as tissue paper, and covered with soft, silken hair.[1]

[1] McFee, *Tree Truths and Fables.*

3. The blossoms or fruit buds.
   (a) Why do most trees put forth blossoms first?
   (b) Examine the blossoms of the pussy willow, the maple, the sycamore, the horse-chestnut, and the apple tree.

4. Watch the unfolding of various leaf buds. Note how cleverly each was creased and folded in its tiny parcel.

5. Learn to know the common trees.

Poems: "Apple Seed John," by Lydia Maria Child.
"The Planting of the Apple Tree" and "A Forest Hymn," by Bryant.
"Forest Blessings," by Margaret Sangster.
"The Vine and the Oak," by Emerson.
"The Birch Tree," "The Oak," "The Maple," by Lowell.
"The Haunted Tree," by Wordsworth.

THE BIRDS

Now the days are full of music,
  All the birds are back again;
In the tree tops, in the meadows,
  In the woodlands, on the plain.
See them darting through the sunshine,
  Hear them singing loud and clear;
How they love the busy springtime,
  Sweetest time of all the year!

1. What birds come first? Keep a chart and note the date of first arrivals.

2. Have the pupils make lists of the birds they know.

3. Read selections from "The Birds of Killingworth," by Longfellow. Discuss the value of birds.

4. What birds are helpful to the farmer?

5. What bird is especially helpful to the cotton planter?[1]

6. What birds are valuable in the forest?

7. Have pupils make lists of birds that hop, birds that walk, birds that sing on the wing, birds that tell their names, birds that sing at night, birds that hunt, birds that are hunted.

8. Where do birds sleep at night?

9. How and where do birds build their nests?

(a) Study specimens of different nests. But *do not* tear them down for the purpose.

(b) Do birds build new nests each year?

(c) Do all birds build nests? What bird lays its egg in the nests of other birds?

10. Name some bird enemies. (It is estimated that man alone kills five million birds annually).

11. Talk about migration. Some of the great bird family are coming and going all the time.

(a) How are the birds guided? Why do they go?

(b) Do they fly day and night on the journey?

(c) Do they fly very high?

(d) Do they ever lose their way?

Watch for the flocks of ducks and geese. Explain that the leader flies ahead at the point where the two lines of birds meet. When he becomes too tired to guide the flock, he falls back, and a second takes his place, without breaking the perfect order of the rank. Watch for "passing callers." Many delightful bird friends may be made in this way.

[1] Because of the great destruction of the quail, the cotton boll weevil is yearly working more and more damage.

Poems:
"The Birds' Orchestra," "The Robin," "Yellowbird," by Celia Thaxter.
"The O'Lincoln Family," by Wilson Flagg.
"Robert of Lincoln," "The Return of the Birds," by Bryant.
"To the Skylark," by Shelley.
"Sir Robin," by Lucy Larcom.
"The Pewee," by John T. Trowbridge.
"Warbling of the Blackbirds," by Jean Ingelow.
(Ask the pupils to add to the list.)
Songs:
"When Robin Comes to Town."
"The Birdies' Ball."
"Robin Redbreast."
"Don't Kill the Birds."
Readings:
Fresh Fields, by John Burroughs.
Citizen Bird, by Mabel Osgood Wright.
References:
Bird Neighbors, by Neltje Blanchan.
Our Birds and Their Nestlings, by Margaret C. Walker.
Birds Through the Year, by A. F. Gilmore.

GERMINATION

Every clod feels a stir of might,
An instinct within it that reaches and towers,
And groping blindly above it for light,
Climbs to a soul in grass and flowers.[1]

1. Read and discuss with the children: "A Laughing Chorus," by Emerson; "Waiting to Grow," by French; and "The Little Brown Seed in the Furrow," by Benham. Pupils should commit these poems to memory.

[1] James Russell Lowell; "Vision of Sir Launfal."

2. Select a few representative seeds, such as pea, bean, corn, and squash, for study. Plant them in boxes of sand and watch their growth. Help pupils to discover that growing seeds need air, moisture, and warmth. Plant a few seeds in a moist sponge for easy observation. Keep the sponge evenly moist, and hang in a dark place until germination is fairly started.

3. Compare bean, pea, and corn seedlings. Why is the stem of the bean bent into a loop as it comes up to the light?

4. Develop the terms coat, cotyledon, caulicle, and plumule, and have the children *see* what each does for the plant.

5. How does the plumule of the bean differ from that of the corn? Which of these seedlings has the greatest number of root hairs?

6. Discuss the use of root, stem, and leaves.

Read "A Poppy Seed," by Celia Thaxter.

Fall Nature Study

What does it mean when the crickets chirp,
And away to the southland the wild geese steer;
When apples are falling and nuts are brown?
These are the signs that autumn is here.

Question the children for further signs of autumn. Have them bring in poems regarding Jack Frost. Talk about the preparations on every hand that Nature is making for winter. How does the wind sound in the fall? Read and discuss "The Gladness of Nature," by Bryant.

Poems:

"Lost: The Summer," by R. M. Alden.

"Fall Fashions," by Edith M. Thomas.

"September," and "October's Bright Blue Weather," by Helen Hunt Jackson.
"October," by Wordsworth.
"Merry Autumn," by Paul Laurence Dunbar.
"The Night Wind," by Eugene Field.

THE FLOWERS

1. What flowers bloom along the roadsides at this season?
2. What flowers are blossoming in the garden?
3. Make a collection of bulbs. Learn how to store them for the winter. What bulbs should be bedded at this season? Plant hyacinth, tulip, and narcissus bulbs in pots for forcing. They make lovely Christmas gifts.
4. Tell the legend of the chrysanthemum; the legend of the goldenrod and aster; the legend of the closed gentian.

Poems:
"Goldenrod," in *Nature in Verse*, by Mary Lovejoy.
"Death of the Flowers," and "To the Fringed Gentian," by Bryant.

THE TREES

The splendor of the trees in autumn is ever a source of wonder and delight to the children. Encourage them to collect and press leaves for the decoration of the schoolroom. Group trees dressed in red and yellow, crimson, purple and green. Notice which trees change their leaves first. Explain why the trees are so gayly dressed. Once we thought the rich colors due to Jack Frost, now we know it is to the decaying mineral matter in the leaves. All summer long the leaves have busily sorted certain minerals from the air and water; the tree could not use them so the leaves obligingly stored them away in their own cells.

How they are repaid for their labor in their beautiful dresses of every sheen and hue!

Read and discuss, "How the Leaves Came Down," by Susan Coolidge. Explain the real reason for the falling leaves: The sap of the tree absorbs the living matter and the food cells of the leaves as the cold weather draws near, so that the tree may store up enough nourishment on which to live through the winter, and to feed her tiny leaf buds until they get old enough to look after themselves. Have the children examine leaves that are ready to fall, and lead them to discover the layer of tissue which has been built across the end of the petiole; this loosens the leaf stalk and it only waits for a gale of wind to carry it away.

Remember next year's buds are formed before the old leaves fall. Autumn is really the beginning of the year as far as the tree's life is concerned. The children will delight in looking for the tiny babies. A willow branch will best serve for the first lesson, for its buds are the easiest to see. The bud is right at the base of the leaf stalk, enclosed in a single wrapping. It is made of two tiny leaves joined by their margins. Strip off the wrapper carefully with a needle and the bud is laid bare. But you cannot see how perfect it really is without a magnifying glass. There are five or six of next year's leaves, complete in every way, even to the veins and the delicate toothing of the edge. Some buds are very small and hard to find. If you were to pull off an old sumac leaf you would likely fail to see the bud. But wipe off the tiny drop of milk which fills the wound and you will find a small, pale hump. With a magnifying glass and a needle you can pick out the tiny cluster of next year's leaves. Perhaps the most

interesting bud chamber of all is that of the honey locust. It is formed at the base of the old leaf stalk, and is a dear little room, shaped like a horse's hoof, all lined with a wall of white fur, and cuddling three or four baby leaf buds. The leaf buds of the sycamore are hidden in a chamber under the stem of the old leaf.

Pupils will be interested in studying the witch-hazel which, unlike other trees, blossoms in the fall.

Poems:

"Autumn Woods," by Bryant.
"Under the October Maples," by Lowell.
"Before the Leaves Fall," by Margaret Sangster.
"How the Leaves Came Down," by Susan Coolidge.
"The Maple and the Pine," "October's Party," and "Autumn Leaves," by George Cooper.

SEEDTIME

All summer long the plants and trees have been preparing for this the most important time of all the year. They have absorbed the sunshine and the rain, the light and the air, and the food which the hundreds of tiny rootlets have gathered from the soil in order to grow and perfect their seeds. And they have accomplished a noble work; for truly a seed is a most wonderful thing! Take, for example, the poppy seed. How very small it is! And yet a wondrous glory is folded inside.

> Robes, my dear, that are fit for kings;
> Scarlet splendor that dazzles the eyes;
> Buds, flowers, leaves, stalks,— so many things! [1]

Many plants furnish seeds so rich in nourishment that they are good for food. (Ask the children to make a list

[1] Celia Thaxter.

of these.) It is not necessary for nature to take care in fashioning these seeds so that they may be easily distributed. Men will look after this business. This is also true of many of the seeds in the flower garden. We gladly gather them and tie them up in neatly-labeled packages ready for planting when spring comes. It is different with the wild flowers and weeds. If their species are renewed, it must be by their own efforts. Call attention to the dandelion and the thistle. Pull one of the airy silken balls to pieces and note the tiny seed at the end of each plume. How swiftly it sails with the wind! Lead the children to note other devices for seed distribution; have them group the plants according to the agent used. Thus:

Sails — dandelion, milkweed, cat-tail, thistle.

Hooks — burdocks, sticktights.

Wings — maple, linden.

Springs — touch-me-not, witch-hazel.

Often Mother Nature devises very cunning treasure boxes for the safe-keeping of her precious seeds. These boxes are not like any that we use. There are many different kinds. Such odd shapes and sizes and so wondrously colored! The children will enjoy making a collection of these. Make a list of plants that protect their seeds in burr, shell, and pod treasure boxes. Many seeds are concealed within treasure boxes that are themselves used for food, as the different kinds of fruit and vegetables. Take the watermelon for instance. The rich luscious fruit that we find so delicious is only a careful protection for the host of seeds in the very heart of the big treasure box. And the apple, the pear, and the orange — to us these are

the most important things about the trees which bear them. But to the trees themselves it is the little seeds within these richly colored treasure boxes that are important.

How are seeds scattered? By the wind, by water, and by animals. Coconuts and certain beans and grains have been carried clear across the sea by the action of the waves, and have been planted upon new shores. Man scatters more seeds than all other agencies combined; he is continually buying, selling, and planting seeds. Hang pods, shells and burrs where children can watch them opening. Open a ripe milkweed pod; put the seeds in a bottle, so that the pupils may see how many seeds were packed in the tiny treasure box. Estimate the number of seeds growing on a single plant. Why are the seeds provided with sails? What would happen if they all settled down close about the mother plant? Lead the children to see that the struggle for life is less where the plants are different than in a clump where all are alike.

Make a school collection of garden, field, and weed seeds. For this purpose two-ounce bottles with screw tops are best. They may be labeled as useful seeds, pests, ways of distribution, and so on.

Bring in as many nut "samples" as possible, for a nut party.

Let all the work with seeds, fruit, and nuts typify the glory of the harvest home. (Read Dunbar's "Merry Autumn.")

Songs:
"October," and "Nutting Time."
Poems:
"The Pumpkin," "The Fruit Gift," "The Huskers," by Whittier.

"The Cornfields," by Mary Howitt.
"Indian Summer," by Emily Dickinson.
"The Cornstalk Fiddle," by Paul Laurence Dunbar.
"When the Frost is on the Punkin," by J. Whitcomb Riley.
"Maize for the Nation's Emblem," by Celia Thaxter.
"A Thanksgiving," by Lucy Larcom.

BIRDS

Read Stedman's "Flight of the Birds." Talk about migration.

1. Have pupils tell which birds are the first to go. Why do they leave?

2. Do the birds that go south nest there?

3. What birds stay all the year? Bring out the idea that birds living on worms and insects could find no food in winter. Those living on seeds sometimes remain in the North if the weather is not too severe.

4. Hawks are more or less troublesome at this time of year. Talk about the common chicken hawk, the little blue darter, the sparrow hawk, and the sharp-shinned hawk. Are the hawks enemies of mankind? (See *Birds That Hunt and Are Hunted*, by Neltje Blanchan.)

5. Learn to know some of the common water birds.

6. Do the birds change their dress for winter? Bobolink and goldfinch are familiar types.

Poems:
"To a Waterfowl," by Bryant.
"The Herons of Elmwood," by Longfellow.
"The Departure of the Swallow," by W. Howitt.
"The Wanderings of the Birds."
"The Last Robin," by H. S. Washburn.
"Story of a Blackbird," by Alice Cary.

ANIMALS AND INSECTS

When we are getting ready for winter, what are all the wood animals doing? Do they know that winter is coming? How do the squirrels, the chipmunks, and the field mice prepare for winter? Who has discovered the fur-lined nest of a field mouse under some low, sheltered shrub, or dug into a squirrel's underground storehouse? Does the rabbit prepare for winter? Question children to bring out stories and habits of these little friends in fur. Read and discuss selections from *Sharp Eyes* by Gibson; read *Queer Ways of Br'er Rabbit* by W. Long. Mention enemies of the squirrels and rabbits, hawks, owls, weasels, foxes, hedgehogs, cats, and man. Read *Riverby* by Burroughs, and the fable of the Hare and the Tortoise.

How does the bear prepare for winter? He eats a great deal and gets very fat. Then he hunts about for a snug den in a hillside or for a sheltered hollow log or tree; here he sleeps until roused by the voices of spring. Ask the children to learn about other animals that spend the winter in sleep. Read *Ways of Wood Folk*, by William Long.

What about toads, frogs, and turtles? They burrow deep into the mud before the ground freezes. Bats hang themselves up by their toes in some cosy corner and sleep most of the time. The nuthatches, chickadees, and woodpeckers make many a winter meal from the countless insects and larvae sheltered under the bark of the trees. Flies creep into snug corners and cracks and lie as though dead, creeping out occasionally on warm, dry days. Spiders crawl into their dens and go fast asleep. Caterpillars build cradles for themselves on the sunny side of twigs and limbs, and under rocks and logs. How many have seen these odd

cradles, or cocoons, as they are called? They are woven of fine silken thread, with now and then a bit of moss twined in for warmth and strength, and so fashioned that the caterpillar is securely shut up inside. Here he sheds his furry coat and dons a shiny, hard, brown one. The old coat is rolled up at his feet, and he goes to sleep snug and warm till spring calls. Who knows what happens then?

Talk about the habits of frogs and toads. Of what use are they? Frogs destroy large numbers of slugs and insects and serve in their turn as food for other animals. Toads destroy countless worms and larvae that are injurious to vegetation. They are valued allies in the garden and excellent flytraps![1]

What becomes of the bees and wasps in winter? Who in the summer has seen where a wasp has dug a tunnel in the packed sand, laid its eggs at the bottom, provisioned it with grasshoppers, and then filled it up so carefully that there was not a sign of the secret chamber?

How do the ants, beetles, and grasshoppers spend the winter?

References:

Bass, Florence. *Highways and Byways* and *Stories of Insect Life.*
Beard, J. C. *Curious Homes and Their Tenants.*
Burroughs, John. *Birds and Bees.*
Comstock, J. H. *The Spider Book.*
Ingersoll, Ernest. *Wild Neighbors.*
Kelly, M. A. B. *Short Stories of Our Shy Neighbors.*
Morley, M. W. *Bee People.*
Patri, Angelo. *White Patch.*

[1] Farmers' Bulletin No. 196: *Usefulness of the American Toad.*

Winter Nature Study

Have the pupils observe frost pictures on the windows. What is the difference between dew and frost? Does the frost ever do harm? Mention some good services it performs:

1. It breaks up the soil.
2. It crumbles rocks to help form soil.
3. It opens nuts for the children and the squirrels.
4. It forms ice and snowflakes.

What did the brook do when it felt the frost coming? Help the children to see the beauty in Lowell's lines.

> The little brook heard it and built a roof
> 'Neath which he could house him, winter proof;
> All night by the white stars' frosty gleams
> He groined his arches and matched his beams;
> Slender and clear were his crystal spars
> As the lashes of light that trim the stars;
> He sculptured every summer delight
> In his halls and chambers out of sight;
> Sometimes his tinkling waters slipt;
> Down through a frost-leaved forest crypt,
> Long, sparkling aisles of steel-stemmed trees
> Bending to counterfeit a breeze;
> Sometimes the roof no fretwork knew
> But silvery mosses that downward grew;
> Sometimes it was carved in sharp relief
> With quaint arabesques of ice fern leaf;
> Sometimes it was simply smooth and clear
> For the gladness of heaven to shine through, and here
> He had caught the nodding bulrush tops
> And hung them thickly with diamond drops,
> That crystalled the beams of moon and sun,
> And made a star of every one;
> No mortal builder's most rare device
> Could match this winter palace of ice.

Read also "The Frost," by Hannah Gould; "The Frost Spirit," by Whittier, and similar poems.

Put a dark cloth outside the window and catch some snowflakes upon it. Have the children see how many kinds they can find. Note that each one has six points — no matter how different they are. Of what use is the snow? Discuss icebergs, ice fields, the land of the Eskimo. The teacher will need to draw heavily upon her store of pictures to make these real to the children. Read from such books as *Little People of the Snow*, by L. E. Mulets, and *The Land of the Long Night*, by P. B. Du Chaillu.

Talk about winter sports. Question the children to get their ideal of a winter evening at home. Read the evening scene from Whitter's "Snow Bound."

THE TREES

Winter is the best season of the year to read the sign language of the trees. From it we may gather all manner of interesting things concerning their hopes and disappointments, the trouble with their neighbors, the secret of age, how they prune themselves, how they take care of cuts, bruises, and broken limbs, and their struggle with a long catalogue of tree diseases, most of which are catching, like the scarlet fever and the mumps. Now, too, we may best observe the shape and branching of the trees and make a collection of woods.

Show the children that it is possible to discern the kind of a tree at a distance by its outline alone. Take, for example, the full-grown oak as it stands rugged against the winter sky. Note the flare of its broad base, the wide sweep of its gnarled and mighty arms, each one resembling

a tree. In the whole aspect of its breadth and tolerance is the dignity of a patriarch, the majesty of a king.

A song to the oak — the brave old oak
Who hath ruled in the greenwood long;
Here's health and renown to his broad green crown,
And his fifty arms so strong.
There's fear in his frown when the sun goes down,
And the fire in the west fades out;
And he showeth his might on a wild midnight,
When the storms through his branches shout.[1]

Study the shape of the elm; compare with an umbrella or vase. Note the graceful, arching branches; the rough, dark-gray bark.

Find examples of trees that send out their branches horizontally, like an apple tree; or incline them toward the earth, like a willow; or hollow them cup fashion, like the sassafras; or build them up mushroom shape, like the pine; or into pyramids, tall and straight, like the poplar; or that allow them to wave at the pleasure of the winds, like the birch.

Always the trees have been reverenced for their grace and beauty. Simple-minded people of all races have worshipped the spirit of the trees, and their records in myth and folklore are a source of never-failing interest to the children. Read "The Talking Oak," by Tennyson. Tell the legend of the aspen tree, the story of the Lombardy poplar and the pot of gold, and other tree legends. Poets, artists, and naturalists have found the trees themes for closest study, until now there is scarcely a tree that is not said to typify some virtue of humanity. The oak is an

[1] Henry F. Chorley.

example of rugged strength; the pine represents constancy; the beech, with its low, wide-spreading branches, is a picture of hospitality; and so on. Coleridge personified the white birch as the "Lady of the Woods," the ash is spoken of as "The Venus of the Forest," the Psalmist compares a godly man to a tree that is planted by rivers of water, whose leaf shall not wither. Pupils will enjoy searching the pages of literature for types, personifications, and emblems; they may also be led to form symbols of their own.

It is well to study certain trees as individual types. Let us consider the oak for instance.

THE OAK

1. Shape of trunk, color and texture of bark; arrangement of branches; the strong taproot deep in the ground, the wide-spreading horizontal roots near the surface.

2. Kinds of oaks — about 300 in the world. Talk about the cork oaks. Find out how cork is prepared for the market.

3. The blossom: the oak bears two kinds of flowers on the same tree. The staminate flowers are in catkins. The pistillate flowers look like tiny balls. The pistil becomes the nut of the acorn.

4. The fruit: some oaks drop their acorns in early fall; others wait a year and a half. Put an acorn in a bottle of water and watch the beginning of an oak. Plant another in a box of moist sand and note how the growing end is protected from injury as it pushes upward.

5. The age of the tree: the older pupils will know how to tell the age of a fallen tree by counting the rings of growth in the stump. They will be interested in learning

how to tell the age of a live tree. A branch forms buds at the end of the growing season, and in the spring it starts to grow by casting off the scales that protected these buds from the cold. So the twig length between rings of scars left by the scales marks a year's growth. It is easy to tell the approximate age of a tree by counting these rings from tip to base of twigs. The oldest branches are usually a year younger than the main stem. Every branch, large or small, must be at least a year younger than the stem that bears it. The youngest wood bears buds in winter; in summer all the leaves are borne directly upon shoots that grew from the winter buds. With these clews in mind, and experience gained by a few tests, judgment becomes very nearly accurate. It may be tested by cutting stems on young trees and counting pith rings.

Do oak trees die of old age? There are oak trees in England that are more than a thousand years old. Find the average girth of oaks in your vicinity. The Round Table of King Arthur at Winchester is from a cross section of an oak eighteen feet in diameter.

6. Ancient tales, legends, and superstitions of the oak are numerous. Find out about the prophetic oak of Dodona; the old Roman "Chaplet of leaves"; the "fairy pathways" in the base of old oaks in Germany; Thor's oak in the Hessian country; Oak Apple day; the Charter Oak; the Royal Oak.

7. Uses of the Oak.

   (a) It produces wood of great strength and durability, valuable for building purposes.

   (b) Its bark is used for tanning and dyeing.

   (c) Its acorn is a food in certain parts of Asia.

8. Pupils should bring in poems descriptive of the oak.

Other trees which make interesting studies are the elm, maple, willow, hickory, ash, birch, linden, poplar, and the evergreens. Read "The Deacon's Masterpiece," by Holmes, and about the building of Hiawatha's canoe, by Longfellow.

Certain products of the forest should be studied. Each topic may serve as the source of one or more lessons, or the subjects may be assigned individually. Lumber and fuel, fruits and nuts, medicinal and other useful barks, sap products and such products as coal and paper should be made interesting.

From a study of the grace and beauty of the trees and the individual use of certain types, it is but a step to the large use and value of trees as a whole, and the subject of national forestry. Question the children to bring out the service of trees to man. The following points will need introduction; for their amplification, refer to any standard work on trees.

1. Trees are important agents of nature for carrying the moisture of the earth into the air.

2. Trees may be agents in producing rain.

3. Trees are a considerable protection against floods and overflow.

4. Trees are great makers of soil.

5. Trees are invaluable in purifying and renovating the atmosphere.

6. Trees are of immense importance in affording shelter to birds and beasts of the chase, and in the many productions which they furnish.

Since the day of the great Frankish king, Charlemagne, efforts have been made for the preservation of the forests.

The head of this work in our country is the Bureau of Forestry under the Department of Agriculture at Washington, D. C. Our national forests include over 150,000,000 acres. They are divided into six districts, each in charge of a supervisor. Immediately under the supervisor each forest has a deputy supervisor, a forest assistant, besides a number of rangers and guards. The business of the forester is to destroy the animals which rob the farmers and stockmen (mountain lions, wolves, wildcats, bears, coyotes, and lynxes); to keep a constant and careful watch for fires; to sow seeds that the forests may be perpetuated; to govern the grazing within their boundaries; to cut out the "weeds" among the trees.

The industry of forestry is second to that of agriculture in the number of people and amount of capital employed and in value of product. Much useful information may be had by applying for the free bulletins of the bureau.

The Bureau of Wood Utilization also issues many bulletins of interest. The business of this bureau is to prevent wood waste. The bureau was founded in 1909, so its career of usefulness is only just beginning, but already it has been instrumental in saving many trees and thousands of dollars to workers in wood.

Some Interesting Subjects for Composition:

The Life of a Forest Ranger.

Training for a Forester. (There are some twenty schools of forestry in the United States, of which the one at Cornell University is the pioneer.)

What can be made from Sawdust.

The Tale of a Balsam Pillow.

Uses for Mill Waste.

BIRDS

Chic-chic-a-dee-dee! saucy note
Out of sound heart and merry throat,
As if it said, "Good-day, good Sir!
Fine afternoon, old passenger!
Happy to meet you in these places,
Where January brings few faces.[1]

Long live the winter birds! This is the thought that comes to us as we gaze from our window on a cheerless winter day. How bleak and bare that old tree would seem were it not for that dear little kinglet who jumps, and flits, and pipes his shrill little note! His merriment and good cheer soon attract a friend from a tall weed stalk in the garden — a bright little chap in a combination suit of reddish drab and soiled brownish white, with a yellow head. He is a stranger, but withal there is something about him decidedly familiar, and when he suddenly calls out "*Ker-chee, chee, chee!*" we clap our hands in delight. It is our dear little friend the goldfinch in his winter suit!

Let us spread a banquet for the birds and see how many friends we can entice. A tree close to the schoolroom window is best. Suspend pieces of suet and meat bones in the branches here and there, add tiny baskets of seed and bran, and some apples thrust securely upon the twigs. A tree so provisioned throughout the winter months will provide scores of interesting bird studies. Besides the familiar sparrows, blue jays, hairy woodpeckers, goldfinches, occasional robins, and belated meadow larks will come dozens of other would-be friends. Some of these are resident birds.

[1] Ralph Waldo Emerson.

Do you know the little titmouse,
In his brownish-ashen coat,
With his cap so black and jaunty,
And a black patch on his throat? [1]

Chickadee (Little Friend) is the common name for the titmouse. He is a cheery, fearless little bird, grateful for the smallest favors, and may readily be coaxed to eat from the hands of his friends.

The nuthatches are interesting citizens. They delight in clinging head downwards, searching under the bark for eggs and unwary insects. Regular little acrobats they are, performing all sorts of laughable feats with ease and agility. A pair of these birds used to have great fun swinging on a clothes line on a friend's back porch. They would grasp the line firmly, and swing head downward until it would seem as though their brains must be in a whirl. All at once they would flit away to a tall poplar near by and run eagerly up the trunk, then come back again pell-mell and take another whirl on the line. They seldom touched the ground, and when they did they squatted and sprawled about very awkwardly. The white-breasted nuthatch is the best known. His cousin, the red-breasted nuthatch, is smaller and seldom seen south of the most northerly states. Both are little slate-colored birds with black caps and necks. The white-breasted nuthatch has a coarse, funny call: "*Quank! quank! yank! hank!*" between mouthfuls.

The red-headed woodpecker is very irregular in his goings and comings. He likes to winter in localities where beechnuts are plentiful. It is fun to watch him dig for buried stores. "His deliberate, dignified ways and his

[1] M. A. B. Kelly.

bright uniform of red, white, and steel blue bespeak him as an officer of rank." There are those who contend that as the red-headed woodpecker represents our national colors, and as he is so much more familiar to all, he should be the national bird, instead of the eagle.

South of parallel thirty-six, the redbird or cardinal grosbeak, the Carolina wren — "little sweeter'n evers" one family dubs them, because of their continued twitter: "Sweeter'n ever, sweeter'n ever,"— and an occasional mocking bird and cedar waxwing will call frequently for a taste of the bill of fare.

Other guests at the banquet tree will be made up of winter visitors — those birds which come to us from some northern country along late in the fall with the cold winds and the snow, and return to their home again in the spring. Among these are the snow buntings or snowflakes, the winter wrens, the shrike or butcher bird, the pine finch or linnet, the golden-crested kinglet, the juncos or snowbirds, the pine grosbeak, the American crossbill, and the brown creeper.

The shrike is a strange character. Reckless, relentless, daring, bravest of the brave, he is the smallest bird of prey, being about the size of the robin. He is also classed among the song birds, and, while mating and nesting at home in Canadian and other northern regions, he pours forth from his "erstwhile reeking beak" a sweet, warbling love song that thrills his chance hearers with delight. He is an ominous-looking bird, with a hawk's bill and sparrow's feet. His body is ash-colored, the wings and tail are black with white markings, and the forehead whitish with a narrow black stripe through the eye. His call resembles a creaking hinge. He has some ventriloquistic powers, and often

imitates the cry of small birds, enticing them within easy range and then pouncing upon them. His mandibles are strong and cruel, and he makes short work of his poor little victim. If he does not happen to be hungry, he hangs the little body on a tree, or on a barbed-wire fence just as a butcher would hang up a beef, and leaves it. He seems seldom to go back to eat his victim, which may indicate that he often inflicts death just for the mere love of killing.

With the exception of the winter wren and the humming bird, the kinglet is the smallest bird that we have, being about two inches smaller than the sparrow. He is a nervous, energetic little chap, never still. Like the nuthatch, "head upward, head downward, it's all one to him." His love song is a beautiful lyric, out of all proportion to his size, and he frequently favors us with a few practice solos before flying north in April.

Poems:
"The Sparrows," by Celia Thaxter.
"The Blue Jay," by Susan H. Swett.
"Snowflakes," by Longfellow.
"The White-breasted Nuthatch," by Edith Thomas.
"The Legend of the Crossbill," by Longfellow.

MINERALS

Winter is a good time to make collections of minerals. Iron ore, copper, limestone, shale, sandstone, coal, marble, and granite are easily obtained by exchange and otherwise, and make interesting topics for geography and composition. Subjects should be assigned and compositions required that thoroughly cover the matter in hand. Use pictures liberally. Many post cards of interest may be obtained by exchange.

CHAPTER XVII

WHAT TO DO WITH AGRICULTURE

Agriculture in the schools of our land has come to stay. Nor is it to be considered a concession to farming or to the farmers; it is the direct outgrowth of the school's obligation to fit the pupils for higher citizenship — the realization that the school must do more than train the mind alone. Neither is it an experimental theory. For nearly twenty-five hundred years Persian schoolboys have received instruction in agriculture and horticulture, in gardens set apart for the purpose. Educational gardens have existed in central Europe since the Middle Ages. To-day there are more than eight thousand school gardens in Austria alone. To Mr. H. S. Clapp, of Boston, belongs the honor of starting the first American school garden (1890). This garden was originally intended for wild flowers, but it proved so helpful and interesting that a large vegetable garden was added. Massachusetts as a state has taken more or less initiative in school agriculture; closely seconded by Ohio, until now all the states are interested, and there is scarcely one but has organized agricultural clubs of some sort, with a state leader in charge, the state College of Agriculture and the United States Department of Agriculture coöperating.

But yet, in spite of the corn and pig clubs of the central states, the potato, poultry, and hay clubs of New England, and the cotton clubs of the South, agriculture in many

schools is not a success. Why? The teacher is often teaching it because compelled to do so by law, and not because of a vital interest in the subject or a determination to press its importance home. She teaches just what the textbook says, perhaps performs some of the experiments suggested. As for a school garden, there is no time for such work, the curriculum is already overcrowded, and the salary does not compensate for the extra work. Often, too, there is a deep-rooted sentiment against "book farming."

The wise teacher makes haste to correlate the study of agriculture with the problems of the neighborhood. For example, some such conversation as the following may serve as the opening wedge: "Boys, what is the matter with that field of wheat across the way?"

"The land is worn out," is the quick reply. "Wheat has been grown there for three years, without manuring the field at all."

'Do you mean to say that the land is absolutely worthless, that it is too worn out to produce any kind of a crop?"

"Oh, no indeed! It just won't grow wheat again without a rest. It might perhaps raise a pretty fair crop of corn."

"You mean, then, that the wheat, being a great lover of nitrogen, has used up so much that there is not enough left to produce a wheat crop. If the owner had manured the place he would have restored the nitrogen, in the form of liquid ammonia. The same result could have been accomplished by turning under a green crop, such as clover, buckwheat, or rye."

"One of our neighbors tried that," observes a member of the class, conclusively. "He turned under a crop of buckwheat, and just about *killed* his land."

"Oh, I know about that," volunteers another lad eagerly. "He did not turn under a *green* crop. The straw was nearly ripe! Father said to do any good it should have been turned under just as the crop was coming into blossom; for, up to that time, the chief growth was from the air, with very little drain upon the soil."

"Mother says if our book on agriculture was any good, it ought to tell why we can't grow cabbage in our garden," complains a girl somewhat timidly. "It has been manured thoroughly, so it does not lack nitrogen. There is plenty of humus turned under always in the decayed vegetable matter. And it is not potash, for we always put on ashes to keep away bugs."

"Very likely the soil needs lime," the teacher suggests quickly. "Cabbages love lime. Suppose you try working in a little around each plant. Bring some of the soil to school and we will test it for acidity."

The way is now open for a study of soils, and it would be a very poor teacher indeed who could not soon have the class teeming with interest. Any good text on agriculture will furnish suggestions for developing a number of soil problems. The following are pertinent queries for investigation:

1. Why do soils become acid?

2. What is an alkaline soil? How may such soil be improved?

3. How does moisture hold soil together and move in it? How may soil moisture be saved?

4. What is the nature of swamp soils? How can they be made productive?

5. How does drainage benefit soil and crops?

6. Look into the need for soil ventilation. Is it possible for soil to be too thoroughly ventilated? What is a soil mulch?

Special Topics:

1. Irrigation: how irrigation water is measured; three methods of irrigation; some famous irrigation plants; water as wealth in southern California.

2. Talk about tiling, and about the reclamation of the swamp lands of the United States.

3. Study instances of drainage by dikes, ditches, and jetties. Examples: the land reclaimed from the sea in Holland; the Mississippi jetties.

4. Fertilizers: All of the large packing houses make fertilizers, composed of blood and bone and manure mixtures, which are especially strong in nitrogen and phosphorus. Secure samples of these. Examine samples of rock phosphates. Find out if any commercial fertilizers have been used in the neighborhood, and what was the result. Discuss the value of lime as a fertilizer. See Bulletins Nos. 141–159, Experiment Station, Wooster, Ohio.

5. Secure samples of the four principal farm soils: sandy, clay, loam, and limestone. Compare them as to color and weight, and as to size of particles.

Problems:

1. What is the best soil? The standard of perfection in soils is the "crumb structure," a condition where the soil is crumbly and porous, but not too loose; firm but not

hard or consolidated; close-grained but not run together or adhesive. Examine some good garden soil.

2. What is meant by texture and structure of soil? Soil structure depends upon the proportion or percentage of the different-sized grains of rock particles in the soil. Structure is their arrangement or grouping together, and the size and percentage of the empty spaces called "voids." Except in the driest sand or dust, soil particles are not in actual contact, but are separated by a thin film of water which holds the particles together in a mass. If greatly magnified, a bit of soil would look like bits of rock of all sizes and shapes, that had been moistened and then loosely piled together, leaving abundant air spaces between the particles, the liquid films acting as an adhesive.

3. What are the functions of a soil? To act as a root-hold and home for the plant root; to serve as a storehouse, furnishing nourishment for the growth and maturity of the plant.

4. How may soil be kept in good tilth? By rotation that kills toxins, by drainage, by ventilation, and by stimulating bacterial action.

5. What elements are usually lacking in soils?

6. How may soil be improved?

References:

Story of the Soil, by C. G. Hopkins.

Soils, by C. W. Burkett.

Farmers' Bulletins:

No. 77, *Liming of Soils;* No. 257, *Soil Fertility;* No. 266, *Management of Soils;* No. 406, *Soil Conservation;* No. 187, *Drainage of Farm Lands;* No. 138, *Irrigation in Field and Garden;* No. 263, *Practical Information for Beginners in Irrigation.*

SOIL MAKING

Formation of Earth Crust: Long ago the earth was a fiery mass of matter whirling through space. It cooled gradually, and as it cooled it hardened into a sphere. Its surface was a crust of solid rock, and all about it were heavy acid vapors. Bare and lifeless as a great iron ball, it whirled through space. There was no foothold for the tiniest plant, no home for the humblest insect.

The Action of Heat and Cold: While the earth was heated, the rocky substances expanded; as it cooled, the rock contracted, cracked, and broke, forming hills and valleys. The cold condensed the heavy acid vapors into rain. Continents rose, small at first, but increasing in size as the contraction went on; the waters flowed in streams through the narrow valleys, and settled in the deep depressions to form lakes, seas, and oceans.

The Work of the Atmosphere: The air, gases, and vapors around the earth crumbled the rock surface and bore the rock dust from one place to another.

The Work of Water, the Greatest of All Agents: In its various forms — vapor, rain, dew, frost, snow, and ice — water worked day and night, and is still working. Read "The Cataract of Lodore," by Robert Southey, and try to imagine its wonderful work as a sculptor. Visit a stream after a heavy rain. Why is the water so muddy? Where do the many pebbles in the bed of the stream come from? Which will be carried farther by the stream, sand or pebbles?

The Breaking of Rocks to Make Soil: Note the crumbling rocks along the edge of a stream. What happens when water freezes in the crevices of rocks? Collect specimens

of quartz and feldspar. Quartz is the hardest of the common minerals. It is very abundant and found in a variety of colors. Sand is powdered quartz. Feldspar has a pearly luster and ranges from white to light shades of gray, pink, red, brown, and green. It is feldspar that gives the color note to the granites. In most cases clay is derived from disintegrated feldspar.

Examine rock fissures. They are filled with soil, roots, and water. Where did the soil come from? How do roots break rocks?

Fungi, Lichens, and Mosses make very interesting studies. They are the simplest forms of vegetable life, yet they served a purpose by no means humble in the very beginning, when the earth was but a mass of crumbling rocks. They took hold determinedly here and there in crannies and crevices, drawing some food from the air and dissolving and absorbing other food from the rock. Their decay added to the rock dust ground out by wind and water, and in time this formed soil. A very poor and shallow soil it was, hardly able to furnish a foothold for the simple plants that sought to grow upon it, but countless generations of life and decay gradually enriched it, until finally the earth became a fair garden spot.

Have the children examine fungi and lichens at work on a rock. Learn to know the commonest of the lichens — the reindeer lichen. The scarlet-crested lichen is very beautiful. Inside the scarlet tips the fruit is hidden, sealed up as with sealing wax. Now and then we may see one of these scarlet tips yawning in the center to let out the spores. On examination with a microscope the stems are found to be quite hollow, like macaroni. Remove one

of the red seals and see if the spores can be found anywhere in the dainty little chambers just inside. Lichens grow on the bark of living trees, on rocks and decaying wood, and on the ground; they vary greatly in form and color. Some of them afford various colored dyes, these being obtained chiefly from rocks in the Azores and Canary Islands. Litmus is obtained from a lichen. A lichen of Asia is used for food. The so-called reindeer moss is a lichen. It grows in great profusion in the Arctic regions and is the chief food of the reindeer.

Make a collection of mosses. See what can be learned about them with the aid of a microscope. Keep a plate of moist mosses and lichens in the schoolroom. One may find some species of haircap mosses all along the woodland paths, in the upland pastures, and even in open fields. They are usually large enough so that all their parts can be seen by the naked eye. The treasure boxes of these mosses are the daintiest imaginable. Each stands firmly on a long stem and is securely fitted with a lid or cap, and frequently veiled with hair. After the cap and veil come off, as they always do when the time comes for the spores to be scattered, one may see a thin membrane stretching over the top of the box, much after the fashion of a piece of oiled paper on the top of a glass of jelly. About sixty little teeth hold the membrane securely in place in damp weather. But when the weather is dry enough for the little spores to be trusted out in the big world, the teeth draw back sufficiently to make a ring of holes all around the box. Out of these tiny spaces the spores manage somehow to escape. In certain kinds of mosses the teeth turn back in dry seasons, forming little daisy-like florets.

The fungi like moisture They grow from spawn which is supposed to be floating in the atmosphere in incalculable numbers. Some diseases are caused by fungi, and in the form of mold, mildew, smut, dry rot, rust, blight, and scab, they are dreaded by farmers and orchardists. The great shelf fungi that grow out like brackets on the trunks of trees are signs that the tree is dying, for most fungi feed on dead tissues. The fungi which we see on the ground are growing on moldering roots or on buried wood. Mushrooms and toadstools are fungi. But they are not the whole plants; they are the fruiting bodies which bear the spores. (Have children study one of these interesting plants.) Some fungi are valuable in medicine. Occasionally small fungi are seen growing overhead on living twigs and leaves. These are seldom numerous enough to work much harm, though frequently they stunt the growth of their hapless host.

The Work of Earthworms: In the great economy of nature all creatures, however lowly, have a work to perform. Lead children to discover the value of earthworms and the common garden slugs or snails. In what kind of soil do they work? What do they eat? Imprison a few earthworms in a glass jar containing moist dirt covered with dead leaves. What do they do with the leaves? Can the worms see, hear, and smell? Try holding a lighted candle close to the head of a worm. See it draw back! It cannot really see for it has no eyes, but the head is in some way able to distinguish light and darkness. It is not disturbed by any manner of din about the jar. Worms cannot hear at all, but they have a very delicate sense of touch. Try hiding a piece of cheese or some savory tidbit among the leaves and see if the worms find it.

Worms breathe through their skins, which need to be kept moist. They eat their way through the soil, consuming dead leaves and waste animal matter which they convert into rich mold. Their burrows penetrate the ground to a depth of from three to eight feet, letting in the rain and air and so benefiting the roots of plants. This work of the worms in loosening and enriching the soil is of incalculable value to the farmer.

LEGUMES

The legumes are invaluable in building up the soil, and they should form the basis of a number of interesting lessons. Have pupils make a list of the legumes grown in their locality. Examine the roots of red clover, cowpeas, alfalfa, and beans. Note how the tubercles vary on the different plants. Explain that tubercles are thought to be rootlets changed in form by countless bacteria. The decay of the tubercles leaves nitrogen in the soil. An average crop of peas or clover is said to add about one hundred and fifty pounds of nitrogen to each acre of soil. Compute the value of this, at the usual cost of sixteen cents per pound for nitrogen in commercial form.

Legumes are often spoken of as "lime plants," because they use so much of that element. Will the legumes grow in any soil? Discuss the kind of seed bed necessary. How may bacteria be supplied? Procure two flowerpots; in one prepare a seed bed of ordinary field soil; in the other put soil from a field where clover has been grown. Sow crimson clover in each, and watch developments.

References, Farmers' Bulletins:

No. 278, *Leguminous Crops for Green Manuring.*

No. 315, *Progress in Legume Inoculation.*

No. 318, *Cowpeas.*

No. 339, *Alfalfa.*

Problems:

1. What legumes are classed as fodder plants?
2. What legumes are used chiefly for pasturage and hay?
3. What one of the legumes is cultivated chiefly for its nuts?
4. Name the legumes which produce seeds of a high food value.
5. Show how the legumes improve the soil.
6. What legumes are specially adapted to a thin, sandy soil?

GRASSES

Peeping, peeping, here and there,
In lawns and meadows everywhere;
Coming up to find the spring,
And hear the robin redbreast sing,
Creeping under children's feet,
Glancing at the violets sweet,
Growing into tiny bowers,
For the dainty meadow's flowers.—
We are small, but think a minute
Of a world with no grass in it.[1]

The grasses are by far the most useful and important plant family. Everywhere on meadow, hill, and valley is spread their soft, beautiful green, ranging from the low bunch grasses of our lawns and orchards to the great bamboos of the tropics. Our cereals — wheat, oats, rye, barley, and Indian corn — are simply cultivated grasses. In the ordinary use of the term, however, grass includes only those plants which are used for pasture and hay.

[1] Song of the Grass Blades.

Have pupils make a collection of grasses for the schoolroom. Classify them into grasses of the meadow, the hillside, the marsh, and the woodland. Learn to know the most common grasses. (Ask your state experiment station and the Department of Agriculture for aid along this line.)

Problems. 1. Do the grasses bear flowers and seed? Find the tiny stamens in the chaff-like scales. Where are the pistils? How are the grasses fertilized? Children find specimens of the little bright blue-eyed, yellow, and white "flowering grasses," which are really not grasses at all, but members of the iris family and classed among the wild flowers.

2. Make a study of one of the common grasses. Timothy is probably within reach of all. Note the small bulbous root, the flowers growing on a long spike. Compare with sweet vernal grass. In the latter the internode is very long, the sheaf and leaf blade very short; it is especially well-adapted to wind fertilization. Why? Timothy is sometimes called herd's grass. It was brought to this country from Europe years ago by a man named Timothy Hanson.

3. What are the grasses most used for hay in your locality?

4. What members of the grass family are best adapted to pastures? Those that spread by means of rootstocks or underground stems. Why? Kentucky blue grass, buffalo grass, and Bermuda grass are the best examples. Many farmers prefer to sow pastures and hayfields with a mixture of grasses, because each plant has different feeding habits and requirements and so mixtures exhaust the soil less than one variety. A favorite mixture is timothy, orchard grass, redtop and clover.

CORN

Upon a hundred thousand plains
  Its banners rustle in the breeze,
O'er all the nation's wide domains,
  From coast to coast betwixt the seas.

It storms the hills and fills the vales,
It marches like an army grand,
The continent its presence hails,
Its beauty brightens all the land.[1]

Study the *roots* and prop roots, and how they branch to support the stalk; their fiber and toughness.

Study the *stem.* How is it made up? Are the joints alike? Note the prominent lower nodes, the pithy stalk, the average height.

How are the *leaves* arranged on the stem? What is their use to the plant? How do the leaves look on a dry, hot morning? Discuss their value as food for stock.

Study the *flowers:* Note the two kinds on each stalk, the stamens in the stiff, spreading tassel; the pistils in the bunches of silk where the new ear is to be. How is corn fertilized? Discuss the value, if any, of cross-fertilization. Examine an ear of corn in the making. What is the use of the silk? Note that there is a silk for each kernel. How does the pollen pass down these little silken tubes? Note the arrangement of kernels on the cob. Examine several ears. Count the rows. Do ears of the same variety of corn have the same number of rows?

Discuss the *history* of corn. It was a native of tropical America. Early explorers found it cultivated by the Indians. Columbus is said to have carried it to Spain. The United States produces three fourths of the world's corn crop — over two and a half billion bushels of grain.

Cultivation:

1. Why does corn need deep plowing before planting? Why should the cultivation of the crop be shallow?

[1] Celia Thaxter: "Maize for the Nation's Emblem."

2. What is the average yield per acre in your locality? Are fertilizers used? How may the yield per acre be increased?

3. Will corn produce a crop on poor ground?

4. What elements does corn remove from the soil? Humus and nitrogen.

5. What is the proper crop rotation? Corn should follow and precede crops which supply the elements it requires. It is a good plan to sow rye or crimson clover in the fall on land to be planted in corn the following season, and plow under the rye crop or clover stubble.

6. What climatic conditions are best suited to growing corn? Where is the corn belt of the United States? Name the two leading "corn" states.

7. What is meant by 'listing' corn? Name sections of the country where this method of cultivation is practiced.

8. Name diseases of the corn plant in your section.

9. What insects are injurious to corn?

Harvesting: Many farmers desire to save both the forage and the grain; how can this be done most profitably? Discuss the value of shredded fodder. How is corn cared for in your community? Discuss selection and care of seed corn. The right kind of corncribs. Machinery used in harvesting corn — corn binders, corn shredders and huskers, corn shellers, etc. Collect samples of as many different kinds of corn as possible. What varieties are the most profitable to grow in your community? Why?

Uses of Corn: 1. The grain constitutes about one half the value of the corn crop. The by-products are starch and corn meal.

2. The leaves and husks besides their use for fodder are used in packing fruits; in stuffing mattresses, saddles, and

similar products; in the manufacture of paper, baskets, rugs, and mats.

3. The stalks supply much of the nourishment of the corn plant. They are a valuable source of commercial alcohol. Stalks from fifty bushels of grain will produce about one hundred gallons of alcohol. The stalk fiber is used in making paper and pasteboard. Pith furnishes material for linoleum and the packing for gunboats.

References: Corn booklets issued by the various farm implement companies, and the following Farmers' Bulletins:
No. 414, *Corn Cultivation.*
No. 229, *The Production of Good Seed Corn.*
No. 298, *Food Value of Corn and Corn Products.*
No. 303, *Corn-Harvesting Machinery.*
No. 313, *Harvesting and Storing Corn.*

WHEAT

Study *the plant;* its leaves or blades and the "head," made up of many flowers. Each flower has three stamens and one pistil, inclosed in a cover, or chaff, so that the seed is self-fertilized.

Discuss the *varieties and range.* How was beardless seed produced? How may new varieties be secured? What is meant by hand pollination? How may seed be improved?

Cultivation: 1. Wheat requires a thoroughly prepared seed bed. Why?

(a) It is a sown crop, hence all cultivation must be given before seeding.

(b) It is a weak-feeding plant, and so needs a soil fertile and mellow.

(c) It needs a firm seed bed to give the root a firm hold and secure capillarity.

2. How may this bed best be secured? Which is better, to sow the seed by hand or to drill it?

3. What soil elements are required by wheat? (Nitrogen, potash, and phosphoric acid.) How may these elements be supplied? Is lime beneficial?

4. What is the average wheat yield per acre? How may it be increased?

5. What is the place of wheat in rotation? Wheat should be preceded by clover, cowpeas, or other nitrogen-collecting, deep-rooted crop; and followed again by some one of the legumes.

6. What insects are injurious to wheat? See Farmers' Bulletin No. 132, Insect Enemies of Growing Wheat.

7. Name diseases which attack the wheat plant.

Subjects for Composition.

A Visit to a Big Wheat Farm.

In a Flour Mill.

From Seed to Loaf.

A Wheat Farm in Canada.

My Bumper Wheat Crop.

Other cereals may be studied by outline, if desired. Have each pupil prepare a map of his home farm. Indicate the crop that was last grown in each field. It possible, mark the crop which will be planted in each next season. Learn to grade grain. Rules and instructions for this work may be obtained from the Railroad and Warehouse Commission, Chicago. Discuss treatment of seed wheat and other grains to prevent rust.

References: Farmers' Bulletins, Nos. 67, 324, and 138.

SUGAR-PRODUCING PLANTS

The two great sugar-producing crops in the United States are sugar beets in the North and sugar cane in the South. Sorghum is grown in latitudes too cool and too dry for sugar cane. It is a member of the grass family whose use is well-known.

Sugar Beets: Topics for Study.

1. Where is the home of the sugar beet industry?
2. When was the industry introduced into our country?
3. What soil is best suited for its cultivation?
4. What is the amount of sugar per root? (18 to 25 per cent.)
5. How to increase the sugar-producing quality: test beets, and plant for seed those roots containing the greatest amount of sugar.
6. *Cultivation:* What method and what machinery are used?
7. Harvesting the crop.
8. Yield per acre — an acre of beets testing 24 per cent sugar would yield about 42,000 pounds of sugar.
9. How beet sugar is made.
10. Effect of beets on soil. Sugar, like cotton, is largely formed from the carbon of the air, so that if the leaves and pulp are returned to the fields or used for stock feed and the manure put on the land, the crop removes little fertility from the soil.

Sugar Cane: Topics for Study.

1. Its membership in the grass family.
2. Where is it cultivated?
3. The "seed." Sugar cane is reproduced by cuttings, which are pieces of stalk containing "eyes" or buds. How

are these planted? How many crops are grown from one planting?

4. *Cultivation:* What kind of soil and seed bed are necessary? What machinery is used?

5. How is the crop harvested?

6. Products: sirup, sugar, and molasses.

Subjects for Composition.

Making Sorghum Sirup.
A Taffy Pull at Aunt Mary's.
A Visit to a Sugar Beet Factory.
Shall We Raise Sugar Beets?
In the Cane Fields of the South.
How Cane Sugar is Made.

THE ORCHARD

In the agricultural sections of our country, the orchards are often sadly neglected. (Read and discuss Farmers' Bulletin No. 154, *The Home Fruit Garden*, and Bulletin No. 87, *Orchards, Cover Crops and Cultivation*.)

Learn how to plant an apple tree. Why should we trim the roots? Why the top? Is a peach tree prepared for planting in the same manner as an apple tree?

If you plant the seed from a big red apple, will you get a seedling which will in time produce an apple of the same kind and quality? Why do fruit seeds usually not "come true"? The little seedling must be budded and grafted from the parent stock. How this is done is most interesting. Perhaps some good orchardist may be induced to give the pupils an object lesson covering these points.

Special Topics:

Fundamental principles of pruning.

Object of spraying.[1]

Making over fruit trees.[2]

Special Spring Work

Experiments with Plants. 1. Layering, cutting, budding and grafting.

(a) Raise a strawberry plant and a grapevine by layering.

(b) Raise a potato and a geranium from cuttings. How many "eyes" should a potato cutting have? Explain why some leaves should be removed from the geranium cutting.

(c) Bud and graft some seedling apple trees, using buds and scions from a good variety, and following carefully the instructions of your text, or of some one who is well versed in the work.

2. Make a study of stems.

I. *Classes:*

1. *Climbing and twining stems.*
   (a) Tendril climbers such as pea, morning-glory.
   (b) Twiners such as hop, bean.
2. *Underground stems.*
   (a) Rootstocks.
   (b) Tubers.
   (c) Bulbs.

[1] Apply to your state experiment station for bulletins on spraying; also to the chemical companies manufacturing spray material. Farmers' Bulletin 283, *Spraying for Apple Diseases.*

[2] Read the chapter under this head in *Among Green Trees*, Rogers. If possible, cite instances where work of this kind has been done.

3. *Condensed stems.* The best examples of these are found in desert regions where the plants must necessarily expose as little surface as possible to the excessive heat of the sun and the dry atmosphere. See the melon cactus, with its odd, turnip-shaped stem.

4. *Leaf-like stems.* Certain plants have stems which look like leaves. The scales on asparagus shoots in spring are reduced leaves; but the hair-like structures which cover the branches of the plant later are really tiny branches which act as leaves. The leaf-like branches of the smilax seem to be delicate leaves, but on investigation they prove to be flattened branches, each springing as a small scale from the axil of the true leaf. The fleshy "leaves" of some varieties of cactus are really flattened stems.

5. *Stemless plants* such as white clover, dandelion, knot grass. Are they really true to name? Show how these plants find safety in hugging the ground.

II. *Modifiability of the Stem.* The stems (trunks) of the tallest trees often reach more than a hundred feet; while those of the "stemless" plants are cut down to a fraction of an inch in length. Again the stems may take on root-like forms, as in many grasses or sedges, or become thickened by underground deposits of plant food, as in the potato and the iris. Condensed forms of stem may exist above ground, or, on the other hand, branches may be flat and thin enough to resemble leaves.

III. *Structure of the Stem.*

1. Examine sections from a year-old apple twig. Note the amount of bark, wood, and pith.

2. Examine cherry sections of the same age. Note the corky layer of the bark, more distinct in the cherry than in

the apple. Note the rough, oval-shaped spots on the outer surface of the twig — these are the lenticels, through which the air penetrates to the interior of the branches. Notice the green layer or cambium in the cherry twig. Compare with that of the apple.

3. Examine cut-off ends of oak, hickory, and other woods. Note the holes which mark the division between successive rings. These holes indicate cross sections of the tubes which served to carry air and water through the stem. Examine sections of grapevine several years old. Note the large size of the ducts. In the billets of wood examined, note the difference in color between the heartwood and the sapwood. Note the narrow lines running in very young stems from pith to bark, in older wood extending only a little of the way from the center. These are the medullary rays which served as channels for the liquid plant food.

4. Have pupils make a sketch of a cross section of five-year-old apple, noting: the corky bark layer, the cambium, the masses of bast fibers, the medullary rays, the pith. Have them state the use of each part noted.

5. Cut across a stalk of growing corn. Examine the cut section. Note the firm rind, the outer mass of pith composing the main bulk of the stem, the groups of wood cells, bast cells, and vessels.

6. Compare the apple and the corn as to stem structure.

7. Examine various green-stemmed plants. Annual plants generally and the very young shoots of shrubs and trees have abundant breathing pores in the epidermis, which serve for the admission of air and the escape of moisture, while the green layer of the bark answers the same purpose that is served by the green pulp of the leaf.

Studies of roots, leaves, and flowers may be pursued, if time admits, following the suggestions of any good text on botany. Try these experiments with flowers:

1. *To show cross-fertilization.* Before the buds of apple or pear open, pull out the stamens with a pair of tweezers, injuring the bud as little as possible and leaving the blossom on the tree. Inclose the flower in a paper bag and examine it from day to day.[1] When the stigma is sticky or rough, carry pollen on a brush or pencil point from flowers of closely related species, and put it on the stigma of the inclosed blossom. Again inclose the flower in the bag to keep other pollen from getting on the stigma. After a few days the bag can be removed without fear of other pollen's fertilizing the stigma. Mark the stem so that the fruit resulting from crossing may be recognized. A number of flowers should be so treated, for some may fail to amount to anything.

2. *To show protection of embryos.* Examine the fruits of the pea, walnut, mustard, clover, and the hazelnut. Notice the tendency toward roundness. Examine seeds of rye, oats, barley, wheat, apple, pear, lemon, and raisin. Here you find a tendency toward the cylindrical, but in both cases there is an avoidance of corners and edges. In an examination of an almond, a Brazil nut, buckwheat, peach, plum seeds, we find sharp edges and corners, but an accompanying hardness that fully protects the embryos. Do seeds in general show a tendency toward dark colors? Secure caraway, nutmeg, pepper, aniseed. Of what

[1] Care should be taken to have each blossom so treated separately inclosed. If more than one blossom is inclosed, all should have the stamens removed to prevent flowers from pollinating each other.

benefit are their tastes and odors to their inclosed embryos? Can you find seeds which have no protection for their embryos?

TESTING SEED

I. *Miscellaneous Experiments:*

1. Make a seed tester of two pieces of wet blotting paper. Sow seed between sheets. Keep damp and at a temperature of 70° to 80° Fahrenheit. Note the time it takes for germination, and the per cent of fertility.

2. Dip pieces of damp flannel in boiling water in order to destroy any mold spores that may be on them. Lay one piece on a plate. Sow the seed to be tested on it, and cover it with the other piece of flannel and another plate. Keep moist and warm, and note the results as before.

3. Plant morning-glory seeds in a box of fine soil and press the soil down firmly. Plant the same number of seeds in a box of loose soil. Compare the results. What rules may be deduced from the experiment?

4. Weigh some corn and beans. Put them in water for twenty-four hours and again weigh them. What is the difference in weight? What idea does this give as to the moisture required in the germination of different seeds?

5. Insert glass sides in a narrow wooden box. Fill the box with moist soil, planting corn and beans close against the glass at different depths as the earth is put in. Cover the box and keep in a warm place. Note the progress of germination daily. Which plants make their way to the surface from the greater depth, corn or beans, and why?

II. *Experiments with Corn:*

1. Study the sand tray, and examine various types of corn tester. Have corn tested in at least one of each.

(This had best be done at home, unless the schoolhouse is heated at night.)

2. Discuss reasons for testing corn. Make a record of the corn tested, noting number of seed, date planted, date sprouted, per cent of fertility. What is the value of grading tested corn?

III. *Prove Rules for Germination:* (a) Seeds require a certain amount of moisture, heat, and air. (b) Seeds grow best when the soil around them is made fine and compact.

Mention seeds that require considerable warmth in germination; seeds that do not need much heat. Explain how plants of the same family vary, mentioning several varieties of corn and wheat.

THE SCHOOL GARDEN

What to do with school gardens is a problem each teacher must solve. In the case of older pupils it is no doubt best in most instances to give school credits for work done at home. This should include credit for work done during the summer months, and should count in the school promotions. Here is a suggested score card:

1. Effort 20 per cent.
2. Care of garden and tools 35 per cent.
3. Record of work done 10 per cent.
4. Value of produce 35 per cent.

Interest in the work may be promoted:

1. By having a judge well-versed in garden work, who will visit the gardens from time to time to score the work and offer suggestions. This may well be some patron of the school, a grandfather perhaps, who is willing to give his services for the public good.

2. By offering various prizes, such as: for the best variety of vegetables, for instance the best bushel of potatoes, the finest collection of novelties, the best exhibit of melons, the biggest pumpkin.

3. By keeping in mind the school exhibit which each district should endeavor to display at the county fair.

4. By working for a Harvest Home to be held at the schoolhouse some time in October — a regular gala day in which school exhibits, picnic dinner, sports of all kinds, and general joy and good cheer compete for first place.

5. By displaying seasonable garden produce — fruit, flowers, and vegetables — in the schoolroom. These should be fresh each morning. Judges may be appointed for the day or the week to award ribbons and honorary cards. Produce may be used by the cooking class, or a garden exchange may be maintained.

If school gardens are attempted, do not allow the young enthusiasts to undertake too much. Remember even a pigmy garden assumes vast proportions when the sun looks down with ever-increasing warmth and nothing seems quite so alluring as a soft bed of grass in the shade. Uniform beds, about five feet in width and varying in length according to the age of the gardeners — seven or eight feet for the smaller children and eighteen or twenty feet for the older pupils—are best. Allow a path of two feet between the beds, and outline the whole with a border of flowers. Each child should be allowed to choose four vegetables for his garden, and he should be expected to care for his part of the flower border. In general it is best to group varieties so that vegetables which mature at nearly the same time shall be near each other. These may then be cleared

away and other vegetables planted in their place without giving the garden a ragged appearance. If possible the plot should be manured and plowed in the fall before the ground freezes, so that Nature may do her part in making the soil friable.

What problems the small gardens present! Intricacies of practical measurement, seed fertility, germination, soil conditions, the plant elements needed, the mysteries of leaf, bud, and flower — offer materials for scores of arithmetic, language, and nature study lessons, to say nothing of encouraging industry, self-reliance, and neighborly rivalry.

Many rural school grounds are not large enough to make gardening practicable. But even in the smallest grounds there are the waste places along the borders, the little plots at the sides of the stoop and along the sunny side of the house. Consider these. Take the pupils into your confidence and spend some happy hours discussing and planning.

ARBOR DAY

Make Arbor Day the culmination of your efforts. Plan a program and a picnic dinner and invite the parents. Decide just where you want trees, shrubs, and flower beds, and put a large diagram of the plan on the board. Don't scatter the ornamentations about promiscuously. Now is the time to inculcate the principles of landscape gardening. A tree or two about the grounds, if shade is needed, and possibly a flowering shrub, or better a climbing rose or honeysuckle to screen a bench or train on a trellis sheltering the well; for the rest keep to the borders and the plot suggested beside the porch and along the side of the

schoolhouse. If there are no screens in front of the toilets, suggest rustic trellises to be covered with hop-vines, honeysuckle, cinnamon vines, or morning-glories.

Make a list of the wants and ask the children to solicit at home. The following are suggestive: tools, nails, rustic poles, fertilizer, shrubs, bulbs, cuttings, seeds. Limit the number of trees and shrubs. Vistas of graceful shade, grass, and a few bright flowers are more delightful than a wilderness of profusion.

For the "stoop" border try nasturtiums and pansies. In the plot connecting this border and the garden at the side, plant petunias, cuttings of scarlet geranium, and feverfew or alyssum. Against the house plant a row of dahlia bulbs, next set a row of salvia plants, then a row of geraniums, and finish with a border of clove pinks and mignonette. If the schoolhouse fortunately boasts a porch instead of the usual stoop, plant a Dorothy Perkins or other climbing rose, and induce the men to put up a rustic railing, whereon a fern or two, a porch box, or a few potted plants may be placed. Here, as elsewhere, avoid the appearance of crowding. Simplicity is the keynote of beauty and elegance in landscape gardening.

Along the boundaries, where flowers are used, put tall plants like asters, chrysanthemums, and cosmos, in the background. Verbenas, candytuft, and coleus make nice edges. Do not neglect the old-fashioned flowers — zinnias, marigolds, snapdragon, and sweet William — they will bloom and flourish under circumstances adverse to the more cultured beauties.

A rose garden does not require much space, and it will be an increasing pleasure as the years go by. Plan to have

a little plot, say twelve by fifteen feet, at one side of the grounds. This is large enough to accommodate twenty bushes, placed three feet apart. Spade up the ground thoroughly, and see that it is plentifully supplied with sand and fine leaf mold. Put out nothing but monthly roses. If you are not fortunate enough to have well-rooted bushes donated, put out strong, vigorous cuttings. Clip all but the tiniest leaves and cover the plant with a glass until it is rooted. Roses started in May will bloom in the fall. Aim to begin with a variety of colors. Let the children try their hand at producing hybrids.

Special Autumn Work

1. *Reasons for fall plowing.*
   (a). Makes the soil more friable. How?
   (b). Destroys many harmful insects which winter in the ground.
2. *Protection of plowed land.*

In warm climates and on light soils, fall plowed land needs protection against washing and leaching rains. How may this be secured? What are the best cover crops?

3. *When to work and why.*

COVER CROPS

More attention should be given to cover crops everywhere. They save and increase plant food, supply humus, and prevent washing and leaching which cause greater loss of fertility than does cropping. They also keep the land from becoming infested with weeds, and give valuable grazing to stock at a time when it is most needed.

Problems: 1. Show how such crops are net gain.

2. What kinds of land should never be left bare in winter?

3. Discuss the kinds of cover crops — rye, oats, wheat, vetch, crimson and bur clover, laying special stress on those adapted to the locality.

4. Find out about the "pure culture" frequently supplied by the state agricultural departments. If possible, experiment with some of it according to directions.

WEEDS

One authority defines weeds as "plants out of place," those that persist in growing where they are not wanted. Read what your textbook has to say about weeds. Get the following Farmers' Bulletins:

No. 28, *Weeds and How to Kill Them.*

No. 86, *Thirty Poisonous Plants.*

No. 188, *Weeds Used in Medicine.*

Make a collection of weeds and weed seeds. Two-ounce bottles with screw tops are best for the latter. Classify them as to common name; kind — annual, biennial, or perennial; their use or harm to man. Note the great amount of seed produced by a single plant — often as many as a hundred thousand seeds in one season. Study their ways of dispersing seed. Weeds are the "tramps of the vegetable world," and like the up-to-date tramps in other walks of life, they travel with all the conveniences of the age — by rail and boat, by motor cycle, automobile, and aëroplane. Their seeds are often carried from one land to another mixed in other seed, such as grass or grain, in hay, in fleeces and hides, and other traded commodities.

Make a list of native and foreign weeds. Nearly all our most troublesome weeds have been imported from Europe.

Special Topics:

Harm done by weeds.
Weed control.
Weed extermination.
Birds that do service as weed destroyers.

INSECTS

No more useful work can be done in the schools than to familiarize the children with entomology. Apply to the Bureau of Entomology for free bulletins. Get a good reference book on insects. Consider the relation existing between the insect world and the plant world; between the insect world and the bird world.

Problems:

1. Compare a grasshopper, a butterfly, a beetle, and a fly. In what are they alike, in what unlike?

2. Collect eggs from the cabbage butterfly, together with the foliage they are found upon; watch the transformation from egg to imago.

3. Note the movements of the caterpillar's jaw from side to side when he eats. How hungry he is! He feeds nearly all the time. Small wonder his skin soon becomes so tight that it bursts, and he is obliged to cast it off! How many times does he molt before he is full-grown? Watch him spinning the silken thread which slowly winds him into a pupa or chrysalis.

4. A chrysalis formed in August or September will be a butterfly in a few weeks. Strive to see the little creature emerge.

5. Study the living butterfly: Note its long, slender tongue, coiled like a spring when not in use. Provide a few drops of sugar and water; watch the tongue uncoil. How admirably it is built to sip nectar from even the narrowest, longest flower tube! Observe that it is the overlapping scales which give the wings their color.

Have the pupils read Wordsworth's poem, "To a Butterfly." Have them write, "The Life History of a Butterfly."

Larvae: It is as larvae that insects are most injurious. And it is the worms and caterpillars from the larvae of moths that create the most havoc. Learn to know the codling moth, the gypsy moth, the common clothes moth, the hawk or humming-bird moth, and their larvae. Millions of dollars are spent every year to protect fruit trees against the codling moth. From Spain there has been imported a wasp-like fly, called the Tachina fly, which is a deadly enemy of the codling moth. This fly does not kill the moth. It lays its eggs on the moth's larvae, and the little maggots which soon hatch proceed at once to devour the larvae.

How to Distinguish Butterflies and Moths:

1. Butterflies fly by day; moths, as a rule, fly only by night.

2. Butterflies have little swollen, club-like knobs at the ends of the antennae: moths do not. (Some moths have feathered antennae; others have antennae in the form of a prism, with a spur at the end.)

3. Butterflies when at rest fold their wings together in a vertical position above their bodies; moths spread their wings horizontally.

Topics for Special Study: Beetles,[1] Bees, Bumblebees, Wasps and Hornets, the Garden Spider and his cousin Daddy Longlegs, the Common Red Ant, the Agricultural Ant, the Dragon Fly, the Lightning Bug, the Silkworm.

Insect Collections add much to the value of a school exhibit. The making of such collections is hardly a task for miscellaneous effort, as special care and aptitude are essential. There may be two or three pupils, however, who would delight in doing the work. Very little apparatus is necessary: a cyanide jar for the quick killing of insects, a butterfly net, a cork-lined collecting box, a breeding jar, mounting boards, insect pins, a few small cards, and some sheets of cardboard. Glass cases are necessary to protect the specimens from the dust. Often an old show case may be obtained at small cost and made to serve the purpose admirably.

1. To make the cyanide jar: Take a good, wide-mouthed fruit jar, with a tight-fitting lid, to the druggist. Have him put in four or five pieces of cyanide of potassium, the size of walnuts, and cover them with a layer of liquid plaster of Paris. When the plaster of Paris hardens, the jar is ready

[1] "There are hundreds of kinds of tiger and ground beetles, which devour many cutworms and caterpillars. The tiger beetles are rather bright-colored and active. They chase other insects, or lie in wait for them. Many of the ground beetles are shiny black, others are marked in gay shades of gold, green, and purple. They usually prowl after nightfall, and some kinds climb trees in search of prey. The tumblebug and the ladybird belong to the beetle tribe. The latter is a special friend of man, since both the larva and the imago feed upon the eggs, larvae, and imagoes of destructive insects. The tumblebug rolls its egg in a ball of moist earth. We often see them trundling their treasure. The male beetle pushes and the female pulls, the forelegs being differently developed for the purpose. Spy upon a pair and watch them bury their treasure! The larva feeds upon the contents of the ball."

for use. Insects whose wings might be injured in the jar may be slipped into an air-tight box and killed with chloroform or ether. Beetles and larvae may be killed in alcohol.

2. A butterfly net is easily made by fastening a handle to a small hoop and gathering to the hoop a bag made of cheesecloth.

3. The breeding jar is a wide-mouthed jar, with a few inches of damp sand at the bottom, and a cheesecloth cover. Keep the insects in it supplied with fresh food of the kind on which they were found feeding. Cocoons should be kept in a cool place while developing. Galls may be collected in the spring and fall, and kept till the flies appear.

4. Mounting board, insect pins, and similar needs may be obtained from any standard school supply house.

Insect collecting is seasonable both in summer and winter, day and night. In winter, insects may be found beneath the bark of trees or in moss, and the pupae may be collected from trees and fences, under old boards and rocks, or buried a few inches in the ground. In summer, insects may be collected in all stages and conditions. One learns the most perhaps from the caterpillars, which may be fed and watched through all the changes of their metamorphosis. Many valuable specimens among the moths, beetles, and other night flyers may be attracted by a lamp set in an open window.

If possible, the male and female and the chrysalis of an insect should be grouped together on a card. Their name and the date of capture is sufficient label; but the helpful, ambitious entomologist will enter in a blank book provided for that purpose, short concise notes of information about

each insect as it is added to the collection. Write to the Bureau of Entomology of the Department of Agriculture for information on mounting specimens, and for helpful leaflets, and suggestions for school use.

REFERENCES FOR FARM AND SCHOOL LIBRARY

Buffum and Deaver, *Sixty Lessons in Agriculture.*
Coulter, John G., *Plant Life and Plant Uses.*
Hunter, G. W., *Essentials of Biology.*

CHAPTER XVIII
HOME SCIENCE

Many teachers approach the study of home economics with a feeling much akin to that manifested by a nervous, high-strung horse when it sees a sheet of paper by the roadside. It is a gruesome, fearful thing, covering innumerable pitfalls and vexations, and invented solely for their own undoing. But is this really true? Let us see. Life for most of us is a workaday existence, either in or out of the home, year in and year out. Whether we get pleasure out of our work as we go along, and find time for the enjoyment of our hobbies, will depend to a great extent upon our attitude toward our task, and the speed with which we turn off the work itself. Studying the ordinary school subjects will not produce this desirable philosophy and skill. Such can be acquired only by careful attention to the principles of home economics — which is nothing more nor less than a study of everyday living and the common-sense methods which go to make that living enjoyable. Home economics is the final connecting link between the school and the home. It is a study not too difficult to find a place in the simplest curriculum.

School Credits for Home Work. Begin the work in home science by recognizing the importance of the boys' and girls' home duties. Possibly you have thoughtlessly been censuring Mary Jones for her rough hands, her hastily brushed hair, or her numerous cases of tardiness, while at the same

time you have commended Nellie Blake as a model of excellence. Do you know that Mary has an invalid mother and a younger brother and sister who require a great deal of care? Do you know that Mary rises at an early hour, helps the younger children to dress, prepares breakfast, washes the dishes, and puts the house in order before coming to school? Often she has barely five minutes for her own toilet and runs nearly all the way to the schoolhouse to avoid being reprimanded for tardiness. She is out of breath, tired and nervous, and there is an odd feeling of resentment in her heart when she hears Nellie commended for doing nothing! Nellie had only to get ready, eat her breakfast, and walk leisurely to school; she doesn't do anything at noon; and in the evening there is no supper to get, no dishes to wash, no children to amuse and put to bed. She is quite free to study her lessons and her mother and older sister are ready and willing to assist if she needs help. Why shouldn't Nellie Blake be neat and cheerful, with perfect lessons and no tardy marks? Why, indeed! But there are tears of bitterness in Mary's heart; she strives not to care when you say severely: "You are fifteen minutes late this morning, Mary. You seem to be getting worse instead of better!"

Often the hours spent outside of the schoolroom are of more importance in the development of boys and girls into capable men and women than the hours spent within. When Mary Jones acquires a home of her own, there will be no futile tears over hopeless household tasks she has never learned to do; unless perchance she comes to regard housekeeping as so much drudgery, and falls into the habit of doing things in a careless, slipshod manner. By linking

the school and home, and thereby raising the dignity of the homely humdrum tasks, Mary's whole life may be made incomparably happier and richer; so, too, might the lives of countless boys and girls be lifted and broadened. Such a step would also be found very conducive to self-government; for it is everywhere conceded that the boys and girls who have an interest and a responsibility in the affairs of the home are the better for it. If the school considers a careful, cheerful performance of little home duties of as much importance as the preparation of lessons, a spirit of friendly rivalry will soon be started. Each boy and girl will be curious to know just how much of the work about the home their schoolmates are doing, and no one will desire to be looked upon as a shirker. Many will fairly insist on being assigned certain tasks at home; and the parents, when once they have recovered from the surprise, will rise up and call the teacher blessed.

School credits for home tasks prove a solid foundation for whatever additional work the teacher may care to outline in home economics.

Extra credits may be offered for cheerfulness, kindness, politeness, courtesy to parents and friends, kindness to animals, doing things before being told, care of clothes, and table manners. Cards may be prepared by the children, and the parents urged to give careful attention to the marking. Home tasks may compass from 50 to 75 per cent of the work done in economics. As a further stimulant to effort, the school board or interested individuals may be induced to give certain prizes to those averaging above 90 per cent.

The Hot School Lunch. Many progressive teachers are insisting upon and providing for a hot lunch in the

one-room rural schools. In its wake have followed increased attendance and decided gain in scholarship and deportment. "I have found that in country schools where the hot-lunch system has been introduced the pupils do twice as much work in the afternoon as when they were eating cold lunches," says the head of the rural school department of a Washington State Normal School. The statement is readily believed, if we consider the evidence of our foremost food experts. Often children hurry away to school after a mouthful or two of breakfast; at noon, under the old plan, they bolt their food and hustle out to play. Small wonder that they have little energy for the afternoon tasks! It is not surprising that when hot food is supplied to stimulate the digestive juices, and time is taken to chew and enjoy the food, increased efficiency should result.

But how can a hot lunch be prepared in a one-room schoolhouse where there are no conveniences, no equipment of any sort? Begin simply. Try adding a cup of hot cocoa or a bowl of soup to the child's lunch as brought from home. It turns the light repast into a feast! And it does not take much time,— a few minutes before school occasionally, a little time at recess, and at noon the finishing touches. The children will gladly bring such dishes as are needed. In winter, the heater may serve as a cookstove; in summer, a few minutes over an alcohol burner, then finishing with a fireless cooker will accomplish the work. A very suitable little alcohol "stove" may be purchased for fifty cents, and a fireless cooker is easily made.[1] The

[1] See Experiment Station Circular No. 776, U. S. Department of Agriculture, on *Home Demonstration Work.*

boys will enjoy making a cupboard for the dishes. "Many hands make light work," and the task of dish washing is soon finished. The teacher should see that this is done correctly; the dishes properly scraped and piled; the silver washed, rinsed, and wiped; the dishes scalded and left to drain dry; the dish mop thoroughly cleaned and hung to sun and air.

Besides the host of tempting nourishing soups, one may serve a variety of other dishes, simple and delicious. Try mush and milk; rice with raisins, milk, and sugar; potato chowder; oatmeal or wheat meal with milk and sugar; tapioca pudding; hot apple sauce or stewed dried fruits. No great amount of culinary skill is needed in the preparation of these dishes. Almost any cookbook will furnish the necessary directions. In making soup, be careful to cook the ingredients a long time at a simmering point, so that every bit of essence will be extracted. If milk is to be used, add scalding hot and serve at once. Long cooking is necessary to bring out the flavor of mushes and porridges. They should be made before school and placed in the fireless cooker.

A recent writer in an educational journal tells how one practical little school teacher in Iowa, a few days after the heating and ventilating system was installed, cooked eggs in the humidifier with great success. Then she saw no reason why she couldn't cook food on top of the stove as well as in the humidifier. Noticing also the intense heat at the fuel door, she conceived the bright idea of baking potatoes on the little shelf between the outside door and the inner stove. This little shelf is really an oven, and potatoes, apples, and other foods can be baked there.

In a certain rural district in northeastern Missouri, there is an ideal kitchen and dining room in the basement. In the beginning this school was just like any one of our 50,000 corn-belt schoolhouses. It was simply one room, with the plaster off in many places, a stove in the center, and around the wall a blackboard which was entirely too high for the little tots. The outbuildings were without doors; tramps had made away with several of the shutters, and broken numerous panes of glass. The district was composed of "progressives" and "standpatters," and torn by petty disagreements over little nothings. Then an enthusiastic teacher arrived on the scene, and doors, screens, paint, and plaster appeared where needed. The playground became a most interesting place. A tall flagpole went up in front of the building, and on a certain appointed day the people gathered under the cheery flag. Soon afterwards, the men of the neighborhood assembled to dig out the basement, haul sand and cement, and put in concrete floor and walls. The district put in a furnace. Later an oil stove, sink, drinking fountain, and pressure tank were added. The men built tables which were easily put out of the way when not in use, and there were cupboards which the women took delight in furnishing with china and utensils. At first, the kitchen and dining room were used only for neighborhood affairs, but soon a cooking class was established, and it was not long until the school began giving delightful little luncheons, suppers, and even formal dinners. Now six acres of land are leased from an adjoining farm, a wonderful school garden furnishes interest and inspiration to the whole county, and a goodly part of the produce grown is utilized right in the school kitchen.

In another country school, the energetic patrons painted the smoke-grimed walls and ceiling, hung neat curtains at the windows, provided improved chairs and seventy-two feet of fine pulp blackboard. When the teacher demonstrated the value and need of hot lunches, the parents provided a two-burner blue-flame oil stove and the necessary utensils. The little five-by-nine entry became the kitchen, and there the first cooking was done. In more than a year there have been few days when the pupils have not prepared at least one warm dish for lunch. Jelly and preserves were made and sold, and funds secured in other ways; to-day a neat kitchen 12 by 14 feet adjoins the main building. One end of this room is fitted with work-table, cupboards, and oil stove; the other has a work-bench and tools for manual training. Here the girls cook and the boys do repair and construction work for the schoolroom and the neighborhood generally. They are privileged to use the room when lessons are finished, and thus time which otherwise might be spent in mischief passes quickly and happily. In this school, as in countless others, materials are brought from home.

So much for difficulties that have been overcome. Each teacher must work out her own problem, remembering that "where there's a will, there's a way." In planning her menus she will do well to keep in mind the teacher's slogan — *timeliness*. Farm wives will cheerfully hand out meat and vegetables in season; but don't ask for fresh beef in June, or for celery and lettuce in winter. Keep in mind the activities of the farm — when eggs are most plentiful, what time of year the fatted calf and the pigs are likely to be killed, what vegetables are in season. Above all be

prepared for emergencies. Very probably on the day when you have planned to have meat loaf with tomato sauce, there will be nothing forthcoming but the tomatoes; or possibly instead of meat, eggs will be cheerfully produced. If you fail to rise gracefully to the occasion, you will miss a golden opportunity; housekeeping is made up of just such little unforeseen difficulties. Often considerable management and tact are necessary to keep the difficulties from becoming real vexations. Don't miss the chance for an object lesson worth while! And really the instance cited is no problem at all — *if you know what to do.* Tomatoes are the most versatile of vegetables. They can be juggled into all sorts of interesting dishes — from soup to fritters, toast, and tomato loaf. Combined with eggs, or a relish of bacon, or bacon gravy, they are food for the gods. Get out your cookbook, or confer with some good housewife; it is more fascinating than poring over the latest novel, providing you are in the spirit. It is a good plan sometimes to allow the girls to prepare dishes they have learned to make at home. If these can be arranged in the nature of a surprise to you and to the school, so much the better.

FOOD VALUES

Supplement the cooking lessons with a few minutes' study of food values each day, in which the whole school may participate. A good advanced text in physiology should be procured for reference.[1]

[1] The Department of Agriculture at Washington provides valuable pamphlets on the subject: See Experiment Stations Circular No. 4, *Food Nutrients and Food Economy;* Circular No. 46, *The Functions and Uses of Food;* Experiment Stations Bulletin No. 28, *The Chemical Composition of American Food Materials;* Farmers' Bulletin No. 142, *Principles of Nutrition and Nutritive Value of Food.*

1. What food is.
2. The use of food.
(a) To build up tissue waste.
(b) To be burned for the production of energy.
3. Classification of food.
(a) Proteids — meats, bread, corn, peas, eggs, fish, milk. Useful for tissue building.
(b) Carbohydrates — made up chiefly of sugar or starch, such as potatoes, rice, etc. Useful for energy making.
(c) Fats — such as butter, fat meat, cream. Useful for making body heat.
(d) Water and salt.
(e) Other mineral substances.
4. Quantity and proportion of foods in diet.
5. The need for a balanced ration.
(a) Make a diet table.
(b) Prepare a series of menus which shall comply with this table.
6. Difference between animal and vegetable food.

Problems:

1. Give a definition of food and name the substances used as food.
2. Can a man subsist upon proteids alone? Why not?
3. Show why an abundance of water is needed in food.
4. Are condiments and beverages properly classed as food?
5. Show why salt is the only mineral which man adds to his food.
6. How can we tell how much food we need?
7. Give the four points which determine the digestibility and value of a food.

8. What is the result if too much sugar or starch is eaten?

9. What is the value of indigestible matter in food?

10. What is the value of sugar as a food?[1]

Experiments with Food:

1. To demonstrate the amount of water in food.

(a) Weigh a piece of fresh beef. Set aside in a warm, dry place for twenty-four hours. Weigh again. To what is the loss of weight due?

(b) Pare an apple or a potato. Weigh the fruit and allow it to dry. Note loss of water from day to day.

2. To show the presence of starch.

(a) By the familiar iodine test.

(b) Grate a potato into a glass of water. Note the white powdery substance — the starch, which collects at the bottom of the glass.

3. To show the presence of fat.

(a) Rub some flaxseed meal upon paper. Note the result.

(b) Shake a small piece of butter or a little sweet oil with ether. What happens? Filter, and allow the ether to evaporate.

4. To show grain albumin, or gluten.

Mix a small mass of wheat flour dough and gently wash out the starch by kneading it under water. The gluten will be left as a stringy, sticky mass.

5. To show the amount of food required daily.

(a) Weigh out the different amounts of bread, eggs, meat, milk, and butter which are required daily. Also measure out a quart of water.

(b) Weigh out the required quantities of fat, sugar, and albumin. The last-named may be represented by gelatine.

[1] See Farmers' Bulletin No. 535, *Sugar and Its Value as Food.*

SPECIAL SUBJECTS

Milk:[1]

1. Its composition and food value.
2. Its nutritive value as compared with other foods.
3. Necessity for keeping milk covered.
4. Pasteurization.
5. Making condensed milk.
6. Butter and its imitations.
7. Testing milk.

Problems:

1. Show that milk is a perfect food. How may it be used to the best advantage? How may the diseases whose germs it is prone to contain be avoided?

2. Show how to distinguish good milk from poor, and describe two methods for testing it.

3. What are the characteristics of a good dairy cow?

4. Name the essential factors in good butter making.

Cheese:[2]

1. Its composition and food value.
2. Cheese making. (A visit to a cheese factory.)
3. Familiar kinds of cheese.
4. Its use as a meat substitute.
5. Cheese dishes for the schoolroom.

(a) Scrambled eggs with cheese.
(b) Macaroni and cheese.
(c) Cottage cheese.
(d) Cheese fondue.
(e) Welsh rarebit.

Problem: Make cheese by using rennet.

[1] See Farmers' Bulletins Nos. 42, 55, 63, 74, 106, 241, 287, 363, 413.

[2] See Farmers' Bulletins Nos. 166 and 487.

Eggs:[1]

1. Composition and food value.
2. Nutritive value as compared with other foods and as a meat substitute.
3. Preserving eggs.
4. Testing eggs.
   (a) Fresh and stale eggs.
   (b) Incubation.

Meat:[2]

1. Its composition and food value.
2. Place in the diet.
3. Meat from the different animals.
   (a) Beef.
   (b) Pork.
   (c) Mutton.
   (d) Chicken.
   (e) Wild game.
4. Different cuts of meat, their cost and nutritive value.
5. How to know good meat.
6. Using the cheaper cuts.
7. Best method of cooking meat.
8. Soup stock.
9. Left-overs and combinations.
10. Care of meat.

Problems:

1. Show how meat ranks as a food. In what is it deficient?
2. Compare fresh, preserved, and decayed meat.

[1] See Farmers' Bulletin No. 128, *Eggs and their Uses as Food.*

[2] See Farmers' Bulletin No. 391, *Economical Use of Meat in the Home.*

3. What diseases may be transmitted by meat? How are they avoided?

4. Show how to select good meat in the market.

5. How do fish and shellfish resemble meat?

6. How is beef tea made? Compare its food value with that of meat.

Substitutes for Meat:

Not many years ago meat was considered a necessity in every home. Now we are coming to see that other foods besides meat can be made to serve in building up our body tissue, at a cost much less than that of meat. Many of these cheaper foods have the added advantage of leaving no waste substances in the body, hence they are not such a severe tax on the bodily organs. "Enough without waste"— this is the meaning of the word *economy*, and it is the rock on which the foundation of Home Economics is builded. We must provide what food our bodies need to enable the organs to carry on their proper functions, and to keep the body in repair, and we must do this as cheaply as possible, hence the value of meat substitutes.

Macaroni, spaghetti, vermicelli, and noodles contain so much starch and flesh-building material that they are equal to meat as a food if combined with cheese, and when plenty of rich, well-seasoned sauce is added they are most palatable. If brown gravy is desired, add a few drops of caramel coloring made by browning sugar and dissolving it in a little water. Many people prefer tomato sauce instead of white sauce with these dishes.

Beans and peas contain about twenty-five per cent of albumin, and are therefore very good meat substitutes,

especially for an outdoor laborer who has need of a great deal of energy.[1]

Fish contains about sixteen per cent of albumin and six per cent of fat. It is not so easily digested as meat, but it can take the place of meat as food.[2] Formerly it was thought that fish was especially nourishing for the brain, but the brain is nourished by the same substances as the rest of the body, hence fish is hardly so good for it as beefsteak.

Review what has been learned about eggs, cheese, and milk as meat substitutes. Are eggs a complete food for man? Why is milk called the most perfect of foods? Can a grown person live on milk alone?

Meat Substitute Dishes for the Schoolroom:

1. Macaroni and cheese.
2. Vermicelli soup.
3. Spaghetti, tomato sauce, and cheese. (Moisten sufficient boiled spaghetti with the sauce, add alternate layers of cheese and buttered crumbs, and bake twenty minutes.)
4. Baked beans.
5. Cream of pea soup.
6. Creamed peas and tomatoes.
7. Eggs in various forms.
8. Fresh fish. (See suggestions in note below.)
9. Scalloped oysters, fried oysters.
10. Baked salmon, salmon patties.

[1] See Farmers' Bulletin No. 121, *Beans, Peas, and Other Legumes as Food.*

[2] See Farmers' Bulletin No. 85, *Fish as Food,* and Economic Circular No. 11, *Canned Salmon Cheaper than Meats.*

Vegetables:[1]

1. Special use of vegetable food.
2. Why vegetables are cooked.
3. The value of green vegetables.
4. Methods of cooking vegetables.

(a) Steaming. (d) Frying.
(b) Casserole cooking. (e) Sautéing.
(c) Baking. (f) Escalloping.
(g) "Au gratin" dishes.

Vegetable Dishes for the Schoolroom:

Baked potatoes.	Creamed cabbage.
Potatoes au gratin.	Mashed turnips.
Saratoga potatoes.	Asparagus or Swiss chard.
Fried potatoes.	Creamed spinach.
Candied sweet potatoes.	Cauliflower au gratin.
Creamed carrots.	Fried parsnips.
String beans.	Fresh peas.
Bean chowder.	Escalloped corn.
Onion chowder.	Tomatoes, any style.

Many vegetables contain all the substances which we need for both repair and energy, so that man can live in good health upon a strictly vegetable diet. This he could not do on lean meat, and would find very difficult upon milk. The most nutritious vegetable foods are the cereals or grains, and such leguminous seeds as peas and beans. These contain much proteid for tissue building and much carbohydrate for energy formation, also mineral salts.

[1] See Farmers' Bulletin No. 256, *Preparation of Vegetables for the Table;* University of Missouri, Extension Service, Circular 1, Jan., 1915, *Cooking of Vegetables.*

Many of the vegetables are to the human body as hay and fodder are to the horse — bulk feed. They contain some starch and sugar, and much fibrous substance wholly indigestible. Their agreeable taste aids in promoting the flow of the digestive fluids, and their bulk excites the peristalsis of the intestine and helps to keep the bowels open.

Potatoes and rice are useful principally for their starch. The green vegetables, as lettuce, spinach, onions, kale, and cauliflower, are useful for their mineral salts and organic acids which act upon the liver and kidneys, and for their bulk material. Where men are deprived of these or any substitute for them they are apt to contract a disease known as scurvy. Many vegetables are rich in iron-bearing albumin, which is necessary for the structure of the blood corpuscles. Of these celery and spinach are probably best.

All green vegetables should be put on to cook in boiling water. Add salt to the water in which greens or vegetables grown overground are cooked; underground vegetables are better if salt is added after cooking. Cabbage, cauliflower, onions, and other vegetables containing volatile oil must be boiled rapidly in an uncovered vessel.

Corn Meal:[1]

Food value: Wheat flour contains just a little more protein than corn meal, and a very small amount more starch. Corn meal, on the other hand, contains roughly four and a half times as much fat as wheat, and three times as much mineral matter.

[1] See Farmers' Bulletin No. 565, *Corn Meal as a Food, and Ways of Using It.*

Corn Meal Dishes for the Schoolroom:

(a) Corn bread.

(b) Mush and milk; fried mush plain, or with sugar sirup, or cheese sauce.

(c) Meat scrapple.

(d) Spider corn cake.

Rice:

1. Composition and food value.
2. Use of rice with meat.

Rice Dishes for the Schoolroom:

(a) Plain steamed rice.

(b) Rice cooked in milk, with raisins.

(c) Rice croquettes.

(d) Casserole of meat and rice.

Bread:[1]

1. Why is bread called "The staff of life?"
2. Principles of good bread making.
3. Hard-grain wheats. How flour is made.
4. Graham flour. Boston brown bread.
5. Unwholesomeness of hot breads.
6. Can one live on bread alone?[2]

SANITATION

Much has been said in the chapter on "Physical Training and Hygiene" concerning the need of concentrated work in sanitation in the rural districts. With the opening of spring, inaugurate a "Clean-up Week." Begin with the schoolhouse; see that buildings and grounds are put in

[1] See Farmers' Bulletin No 389, *Bread and Bread Making.*

[2] A collection of the Farmers' Bulletins on foods issued by the Department of Agriculture will aid in the school study of home economics.

first-class condition. Establish a system of credits for home work. Following are points that may be covered: Cleaning yard, pruning trees, pruning bushes and vines, setting out trees and shrubs, building trellises, painting or whitewashing fence and outbuildings, painting house, cleaning windows, cleaning or papering walls, painting inside woodwork and floors, cleaning room.[1]

Organize a Civic League, with the proper officers and committees. Aim to interest the parents as much as possible. Small prizes may be offered for:

The best kept lawn.
The most attractive display of porch boxes.
The best line of bird houses.
The best drinking fountain for the birds.
The best display of ornamental plants on the lawn.
The most attractive summerhouse.
Novel ideas in garden seats.
The neatest kept hedge.
The most flourishing arbor.
The best croquet ground.
The best tennis court.
Trellises of vines screening approach to toilet.
The best homemade lawn swing, garden chair, and hammock.

The slogans "Swat the Fly," and "Death to the Mosquito," are worth pushing. Inaugurate an active campaign against these pests.[2]

[1] See Farmers' Bulletin No. 185, *Beautifying the Home Grounds;* No. 432, *How a City Family Managed a Farm;* No. 270, *Modern Conveniences for the Farm Home.*

[2] See Farmers' Bulletins Nos. 155, 444, 450, 459, 463, 478.

Care of the Sick:

1. Making bed.
2. Bathing.
3. Care of room.
4. Poultices.
5. Hot-bran bags, a substitute for hot-water bottle.
6. Consideration of the patient's diet.
   (a) Tempting foods.
   (b) Attractive serving.
7. Cheerfulness.
8. Care of convalescent.
9. What not to do.
10. Disinfection.

THE HOME

The Model Farm Home. Encourage the boys and girls to plan homes they would like to own. These may be modeled in clay or plaster, drawn with pen and ink, or simply fashioned from pictures selected from papers and magazines and pasted on a sheet of cardboard or heavy Manila paper. Let them plan the different rooms of their house, giving particular attention to simplicity, convenience, and color scheme.[1]

Problems:

1. An inviting hall.
2. The stairway.
3. Cozy corners.
4. A cheerful living room.
5. The dining room.
6. The model kitchen.
7. The model bathroom.
8. The sleeping porch.
9. Attractive bedrooms.
10. Arrangement of the basement.
11. The water system.
12. The light and heating plants.

[1] See Farmers' Bulletins Nos. 126, 432, and 607.

Get as many pictures as possible from the household and trade journals illustrating these points, the object being to train the taste and ideals of the future home makers.

In home decoration the keynote should be appropriateness, whether in a palace or a cottage. Color should be carefully considered. Bright colors and tints should not be used without very good reason. The eye should be trained in color combinations, and bright colors should not be used together; for if too intense, they will discord, and offend the eye as discord in music offends the ear.

Problems for Youthful Decorators:

1. The walls — their position as the background of the home. If paint is used, soft, neutral colors are desirable. Avoid large flower or scroll designs in wall paper. Why?

2. The pictures — which should be few in number and of real worth. Copies from the great masters may be obtained at little cost. Avoid gaudy frames and cheap collections of family portraits. Passepartout a few good pictures. These may be hung in the schoolroom or the children may have them for their own rooms at home.

3. The woodwork.

(a) What kinds of finish are desirable?

(b) Samples of different stained woods may be studied.

4. Curtains and draperies. Exhibit pictures of effective door and window treatment. Show samples of materials and discuss their comparative value. Girls select their favorite material and illustrate an attractive window drape by drawing, or by the use of tissue paper.

5. The treatment of floors.

(a) What finish is most desirable?

(b) Why are rugs preferred to carpets?

(c) Talk about linoleum and other floor coverings: how these are made; their value in various rooms.

Textiles. Exhibit samples of sheeting, pillowcase and table linen, and the common dress fabrics. Teach the girls to recognize them at sight and to know their value. Have them look up the stories of flax, cotton, and silk. Find out how calicoes and other goods are printed. Is it economical for a woman to spend her time making such articles as sheets and pillowcases, when these can be bought of good quality ready made?

The Class in Gumption. A recent writer on household problems tells of a school where a class in gumption was a part of the daily program. "The pupils were taught how to do all sorts of handy jobs about a home, stopping leaks, setting panes of glass, fixing refractory locks and hinges, putting new washers on faucets, making simple labor-saving devices out of material at hand — in fact, learning to adapt themselves quickly to any need which arose." Can you imagine anything more practical? Surely gumption — the adaptation of practical common sense — is more necessary in housekeeping than in any other walk of life. Let us have more of such classes!

Problems:

1. Making old furniture new.
2. Cretonne and a box of tacks.
3. Handy devices for the home.

(a) Dish drain.
(b) Clothes rack.
(c) Ironing board.
(d) Footstool.
(e) Newspaper rack.

4. The fireless cooker.[1]

5. A cheap and efficient ice box.[2]

6. A cheap and efficient sterilizer.[2]

Thrift. Housekeeping is a business, just as difficult and important as any commercial enterprise. To carry it on successfully requires a high degree of skill, wide information, and judgment. To these characteristics must be added thrift. "Thrift is not an affair of the pocketbook, but of character," says Miss Florence E. Ward, specialist in club work, Department of Agriculture; "one can be a spendthrift on a dollar as well as on a thousand dollars." Thrice blessed is that teacher who succeeds in impressing this upon her pupils, and who leads them to an understanding of the basic principle of home science — *true economy*, which means not only saving, but planning, earning, and conserving. Wise economy makes scrimping unnecessary, and proves conclusively that "money is valuable only as it serves to make people happier and better."

Teaching the pupils to be thrifty can be made practical and interesting.

1. Put an itemized jumble of a day's work on the board. Have the pupils put it into desirable routine. Discuss the various plans. Determine who has the best one and why.

2. Specify a certain sum to provide food for a family of six one week. Let the pupils work out menus which shall conform to food requirements and keep within the sum set, saving a little if possible.

3. Teach the keeping of household accounts.

[1] See Farmers' Bulletin, No. 296.

[2] Described in Farmers' Bulletin, No. 353.

4. Show how money may be saved by buying in quantity.

5. Discuss the value of a truck and fruit garden in home economy.

6. Keep a bulletin of "savings," — little discoveries in the economy of time, material, and money: such as, "A pinch of soda in sour apple sauce is a saving of sugar." "Salt sprinkled upon anything which has boiled over on the stove or in the oven stops the smudge."

CHAPTER XIX

SCHOOL RECREATIONS AND AMUSEMENTS

Our minds often need rest to be better able to take up the subject in hand. Bishop Hall says, "Recreation is to the mind, as whetting is to the scythe, to sharpen the edge of it which would otherwise grow dull and blunt." School recreations and amusements are important factors in the make-up of every good school. Rightly conducted they are valuable aids in school government, and may advantageously employ much time that would otherwise be wasted. Teachers have long recognized the fact that children need change and variety. It is one of the teacher's problems to furnish scope for the ever-increasing mental and bodily activity of the child, to supply new food for thought and new subjects of interest. The mastery of the assigned lesson is only a part of the pupil's education. He must be led to acquire a knowledge of current events, and to become acquainted with literature. The time that can be taken from the regular work of the classes and given to more general information is limited. Therefore, the best use should be made of it. Pupils would be able to do better work if they had a few minutes recreation after each hour's study.

In the majority of American schools, it is customary to have some form of devotional exercises in the morning. These when properly conducted may be made the means of profitable recreation; their attractiveness lending a

special incentive to punctuality in the morning. Where Scripture readings are used, selections should be made which are complete stories in themselves or which contain strong moral lessons. It is not advisable to comment on Scriptural readings, but there can be no objection to comments of a purely historical, literary, or moral character, and they may add greatly to the force of the reading. Many passages of Scripture contain little meaning when read apart from their historical setting. Incidents of the Bible narrative have been made the themes for many notable poems and songs. It heightens the effect to use narrative, poem, and song together when possible. The following illustration will show how this may be done.

A good example of faith and courage is revealed in the story of how captive Daniel stood before the throng at the impious feast of the king Belshazzar and, rebuking the king for pride and idolatry, read and interpreted the hand writing on the wall. The Bible narrative is found in the fifth chapter of Daniel. Read the well-know poem by Lord Byron entitled, "The Vision of Belshazzar." The narrative also suggests the familiar hymn, "The Hand-writing on the Wall."

Generally the Scripture readings will occupy only a portion of the time devoted to opening exercises. To these readings may be added responsive quotations at roll call, a school newspaper, discussions of current events and other items of interest. When quotations are used, it is a good plan to ask for quotations from some particular author or upon specified subjects. Quotations of thought-fragments will be of little value, for they may be gathered almost without effort by the pupil. The newspaper might

appear weekly, biweekly, or monthly, as the school prefers. Editors should be appointed for the various departments; editorial, society, current events, local news, and advertisements. A school paper conducted properly would give the pupil valuable information regarding the preparation of manuscript and the general make-up of a paper, besides being a source of never-failing interest and no little amusement.

Aside from the opening exercises, the recitation always presents scope for recreation. A change in the manner of recitation, from time to time, is an excellent thing. Suppose, for instance, that the class in geography has been studying the Mississippi River system and is fully prepared to tell where the river rises, how long it is, between what states it flows, and so on. Instead of going through the routine of questions and answer during the class period, the skillful teacher takes pupils on an imaginary ride down the river from the Falls of St. Anthony. They are led to observe the varied resources and industries of the region through which they pass, the size of the various cities, some of their famous buildings, their "nicknames" and history, the advantages which they possess for trading and manufacturing, the sportive names of the states passed, something of their people and history. The teacher occasionally reads selections relating to some point which they are passing, and shows interesting views of buildings and scenery along the route. Then, too, she has samples of products from the different localities, which the pupils examine with interest. Very likely it takes more than a week for them to reach the Gulf of Mexico, but the time has been well spent, and they have learned more about the

Mississippi Valley than they would in a month in the old way. After the journey is over they write a composition about their trip.

Many teachers neglect composition work. Exercises in the expression of thought should be constant from the time the child enters school until he leaves it. The Committee of Ten report that pupils should begin to compose in writing not later than the third year. Before this time, they should copy selections from the printed page, from memory, and from dictation, as an exercise in spelling, capitalization, and punctuation. Too often pupils regard composition writing as a dreaded task. Often teachers expect too much of pupils; it takes time and practice to produce an excellent composition. Good results may be obtained by talking with the pupils about a subject, and then asking them to write what they can about it within a given time. The work should always be read and kindly criticized. The time for writing may gradually be extended, and the pupils will soon be able to write readily and naturally. A composition hour should be arranged in the Friday afternoon program.

It has become quite a puzzle for teachers to know what to do on Friday afternoon since speaking pieces has gone out of fashion. Why not occasionally revive the old custom, which had so much to commend it? Prepare an attractive, interesting program, and invite the parents to be present. Detail committees to wait upon the guests, and to exhibit and explain the specimens of school work which decorate the room. It is not advisable to spend much time decorating for the occasion; let the decorations be the accumulation of the term's work. After the program has

been given, let the teacher announce the intention to have every Friday afternoon "reception afternoon," and invite the parents to be present whenever possible. Then she must mass her energies to gather attractive Friday afternoon material. No one should go away from a meeting of this kind without a feeling of conscious gain for himself or of pride in the work and success of the pupils. Compositions, minute speeches, hours with noted authors, quizzes, and conundrums are among the many features that help to make an interesting program.

Besides the Friday afternoon program, there are the celebrations of authors' birthdays, and of days notable in American history. These may be planned so that they will interfere but little with the regular work of the school, by assigning different parts of the exercises to different divisions of pupils.

Space forbids dwelling upon the subjects of the old-time school exhibitions, of school debates, of gymnastic recreations, of experiment lessons, and the countless other items that come under the head of recreation. In this, as in all other departments of school work, the teacher must be careful not to ride a hobby. As Bishop Hall says, "He that spends his whole time in recreation is ever whetting, never mowing; his grass may grow and his steed may starve. The work goes forward when the scythe is so seasonably and moderately whetted that it may cut, and so cut that it may have the help of sharpening."

Here, also, the subject of out-door amusements demands attention. Mental work is wearing, and will soon produce physical exhaustion in a growing child. He needs out-door exercise, and happy, healthful play. No amount of

punishment is half so effective as a half hour of hard play to curb the spirit of mischief and disorder.

The teacher should manifest an intelligent interest in the pupils' amusements. Whenever possible, she should become their companion as well as teacher. She will thus win their confidence and regard, and her field for usefulness will be widened. "The teacher should feel an interest in the sports of his pupils that is as great as his interest in their studies; for play is an essential of healthy development. Every honest, sound, hearty game is just so much added to the reserve force of health for the future; is just so much added to the light-heartedness of the present."[1]

[1] Horace Mann.

CHAPTER XX

DUTIES OF PARENTS AND TEACHERS

Between people who are so often brought into contact as teachers and parents, it is desirable that there should exist some well-defined understanding regarding relative duties and obligations. In many of our public schools, the usefulness of one teacher after another is effectually destroyed through want of sympathy between the school and the home. Too often the parents row in one direction and the teacher in another. Why is this? Let us inquire into some of the causes of misunderstanding between parents and teachers.

Parents often do not sufficiently recognize the importance of the school. This lack of appreciation shows itself in many ways. Chief among them is keeping the pupils at home for trifles. Mr. Blank makes a trip to a neighboring city, and Tommy coaxes to accompany him; as he has not been away for some time, the request is granted. Next morning Tommy returns to school, but at noon he reports that the lessons for the afternoon are all so easy, just what he has had before and knows perfectly, and he doesn't see any use in going back that afternoon. So he stays at home, and very likely does not return to school for a week, and then it is only a few days until another break. It is impossible to interest him in school at this rate.

The following story indicates conditions with which one rural school teacher had to contend. The nearest house

was within a stone's throw of the schoolhouse, and from this home came five pupils. There were two little tots at home, and the mother was naturally a busy woman who needed much help. She fully understood how to keep the children busy, and hardly knew how to get along without them. She finally hit upon a plan by which they could attend school and help her, too. Fortunately, they had a dinner bell, and when she wanted a pail of water or an armful of wood, one tap of the bell signaled Willie; or perhaps the baby was cross and needed some one to play with, then two taps brought Emma, and so on for the other three. Of course the bell often caught the youngsters right in the midst of a recitation, but they were expected to drop everything and run. The teacher endured this for nearly two weeks, and then she ventured to remonstrate, and finally, to the indignation of the mother, refused to allow the children to leave the room during school hours. The parents succeeded in keeping that teacher from being reappointed the following term.

Parents are apt to overestimate their children's knowledge. They are too anxious to have them advance, and thus they encourage superficial work. One mother was heard to complain before her little daughter that the child's arithmetic, an ordinary third-grade book, was too easy. It contained nothing but what she had had for over a year; there were not enough problems, and it did not "get down to business." It was suggested that it was a difficult matter for a child of eight years to "get down to business," as her reasoning faculties were not developed, and that it was better for her to drill on the fundamental operations until she could perform the work quickly and accurately

before attempting anything more difficult. Upon questioning the teacher, it was found that when this child was left to do her work alone she was careless and apt to make mistakes, and needed just the drill she was getting.

A young lady of sixteen who prided herself on having attended school in Chicago, appeared in the "upper room" of a small village school of two rooms the second week of the term, and astonished the teacher by saying she would like to study algebra, geometry, ancient history, Latin, and astronomy. The teacher frankly told her that she was willing to teach her what she could if the pupil could satisfy her of being prepared for such work. The pupil wanted to review algebra, and objected to reciting with the "beginning class," because she had been over the work and could probably go faster than the class. But the teacher refused to have another class, as there was not time for it. The teacher had a suspicion that the pupil did not know as much as she thought she did, and experienced some satisfaction in completely confusing her in the division of one polynomial by another. Then the teacher insisted upon seeing the grades from the former school, or else upon giving an examination before commencing the other studies. The next day the pupil brought a common school diploma! She was put with the ninth grade, and soon proved to be the poorest scholar in the class. She attended the school only a short time. What was the use? The teacher didn't know anything! There are many other young people not unlike this young lady.

Parents are too critical. Many are constantly on the lookout for mistakes, and criticize the teacher before their children.

Some parents are inclined to dictate. A good many of the parents nowadays have either "kept school," or have some pretty well defined ideas as to how it should be done. They are not slow to send messages embodying their ideas, and are offended if the teacher does not adopt them at once. Doubtless many teachers have had an invitation from some friendly patron to bring difficulties to her if they need help, because she has taught school and knows just what difficulties teachers have!

A lack of personal acquaintance frequently results in misunderstandings. Teachers sometimes spend months with pupils whose parents they have never seen. During this time, the parents have probably formed their opinion of the teacher, and spoken freely either for or against her, and yet very likely they do not even know her by sight! All the knowledge they have is derived through their children, a knowledge which may be right, or it may be wrong. Too many people believe implicitly what their children come home and tell.

We must not be understood to blame the parents for all these troubles. Often teachers are wholly unworthy the confidence and coöperation of the parents. Not a few indolent, ignorant persons have been licensed to teach through having influence with the county superintendent. They have gained their situations through paper qualifications, and so far as usefulness in their schools is concerned, they might as well be paper teachers. Again, while the teacher may be well-educated, she may be too self-sufficient, too pedantic, or too haughty, and unable to teach.

As a means of avoiding these evils, or of removing them when they have found a place, let us consider some of these

mutual deficiencies. Let us first take up the *duties of the teacher*.

1. She should fully recognize the importance of her work.

2. She should seek to become acquainted with the parents.

3. She should be willing to explain her plans to the parents.

4. She should encourage the parents to visit the school.

5. She should truthfully represent the children to their parents.

The parent inquires, "How does Johnny get along?"

"Oh," says the teacher pleasantly, "Johnny is doing nicely."

However, Johnny may be doing anything but nicely; possibly the teacher might have been even then pondering over what to do with Johnny. The answer does not long deceive the parent, and is injurious to both teacher and pupil.

6. Teachers should have "good manners." From their almost constant contact with pupils, they are apt to think their own opinions infallible; and they sometimes commit the ridiculous error of treating those wiser than themselves as children in knowledge. The teacher should endeavor to make her conversation instructive, but she should assume no airs of superior wisdom. She should remember that the majority of persons like to learn without being reminded that they are learners.

7. She should be willing to give her whole time to the school if necessary.

8. She should carefully and conscientiously perform every known duty. She can then be happy, for there will

be the satisfaction of having performed her duties to the best of her ability.

But after all, her success will depend very much on the parents. They must come forward and crown the work. How many teachers have had the satisfaction of hearing a parent say:

"My little girl has learned more this term than she ever did before," or "I never can thank you enough for what you have done for my boy."

Let us next consider some of the duties of the parents.

1. Parents should reciprocate the teacher's attempts to get acquainted.

2. They should visit the school. It stimulates the teacher and pupils to do better work. Parents should manifest an interest in their children's studies. Often they do not even know what their children are studying. We know a lady who helps her little boy with all his lessons every evening. This is a good plan, provided the parent does not give too much help. We have known children to prepare their lessons at home so as to have more time to play in school. This makes a great deal of extra work for the teacher who must provide profitable busy work for them. Children who are accustomed to having help with their lessons will seldom master any difficulty for themselves.

3. Parents should learn the teacher's plans and do all in their power to aid.

4. They should promptly supply the necessary books and other supplies. If a parent has a doubt about the necessity for a new book, he should see the teacher about it at once, and not send an uncivil or angry message by the

child, or worse still, spend an hour or two gossiping with the neighbors on the teacher's folly of pushing the children through books.

5. Parents should see that their children are decently clothed, and cleanly in their persons. The character of the mother is reflected in the persons of her children. Let one but take an inventory of the child and he has a fair idea of the condition of the home. Soap and water are cheap and there is no reason for the teacher to be insulted with filthiness. She can have no heart to come in contact with such pupils. It is sometimes necessary to send a child home with a note to the mother requesting that she give him a bath and clean clothes before allowing him to return to school.

6. Parents should see that their children attend punctually and regularly. Children who are too ill to go to school should be treated as sick patients, and not be allowed to romp about the house, read, or look at picture books.

7. Parents should be slow in condemning the teacher. Often some highly deserving youth who has been punished for his dark deeds determines upon revenge, and tells his story to any one who will hear it. The inconsiderate parent listens sympathizingly and heartily condemns the teacher; often going so far as to make a hurried visit to the school, and angrily lecturing the teacher before the pupils, without learning her side of the story. If the teacher attempts to explain matters, the parent refuses to hear anything different from Johnny's version, and goes away very indignant, mentally resolving to do everything in his power to keep the teacher from teaching the school another term.

Parents often expect more of a teacher than she can possibly accomplish. They expect the school to be a

model of good order, and each one wants his child to be foremost in learning. The parent often compares the teacher's government with his own family discipline. He forgets his frequent fits of impatience, even in his little circle, and wonders at the "unrestrained temper" of the teacher, who is probably doing all that can be expected, with some thirty or forty pupils whose tempers, capacities, and habits are as different as their countenances. Consider the life of the teacher. Every error in matter or manner of the class work must be corrected; and at the same time, the stolen whisper must be heard, the idler must be watched and his plaything captured, the arch trick must be anticipated, the wayward set right, and the stubborn and impudent subdued. Who can wonder that the teacher should sometimes make mistakes in discipline?

8. Lastly, parents should give the teacher their sympathy. If teachers could have the sympathy and active coöperation of parents, the profession would soon be filled with devoted and talented men and women willing to sacrifice all for their work.

CHAPTER XXI

THE REWARDS OF THE SUCCESSFUL TEACHER

It has been alleged, and with much justice, that the calling of the teacher, which demands for its successful exercise the best of talents, the most persevering energy, and the largest share of self-denial, has never attained an appreciation in the public mind at all commensurate with its importance. It has by no means received the emoluments, either in money or honor, which strict justice would award in any other department to the talents and exertions required for this. Not a few talented teachers have been forced to leave the profession because they could not earn enough to support their families, and in many instances their places have been filled by persons too young and ignorant to be employed elsewhere.

The people have been very slow in awakening to the pecuniary value of the teacher's labor. Happily the time has passed when the farmers and mechanics of a school district felt that they could afford to pay more liberally for washing and ironing, for making butter and cheese, or for tilling the soil, than they could for educating the immortal minds of their children! During the first half century after the Revolutionary War, schoolmasters were paid from ten to fifteen dollars a month, exclusive of board; and the schoolmistress was paid from three to eight dollars per month. As late as 1814, Mary Lyon, the founder of Mt. Holyoke

Seminary and College, taught her first district school in western Massachusetts for three dollars a month, and "boarded round."

It lies within the power of the teachers to control the wages. As a rule, people are capable of recognizing a *good* teacher, and are not slow to believe that "the laborer is worthy of his hire." The teacher who is ready to devote heart and soul to her work, can often command her own salary in the end. How many teachers, who have been about to leave the limited district where they were teaching, have been told by parents that if they would stay for another year the people would contribute a sum sufficient to make up the difference in salary gained by the change? We have known instances of this kind, but those teachers were of the patient, industrious, never-tiring, hard-to-find species, who made themselves invaluable to the community.

No one ever heard of a person accumulating great riches by teaching school. The chief reward of the teacher is not mere money-getting. She must have some more elevating, inspiring motive, if she desires to go cheerfully about her daily toil and find enjoyment in the tiresome routine. There are many rewards in teaching.

The teacher's profession affords vast opportunity for intellectual growth. The faithful, devoted teacher always learns more than her pupils; she cannot help but grow mentally. She comes before her class each day with an increased wealth of knowledge and a variety of ideas for illustration, feeling that she can present the various subjects in a manner adapted to the pupils' comprehension. This consciousness of power is a reward in itself.

The teacher's profession offers an incentive for moral growth. She recognizes that example is better than precept, and feels the need of constantly keeping a watch over her own thoughts and actions. She learns self-control. As she masters her impatience, bridles her tongue, and learns to smile instead of showing anger, she recognizes with Seneca, "That the most powerful is he who has himself in his power." She finds that her moral power over others is much increased and that she can secure obedience with half the effort formerly required. This conscious victory over self cannot be measured by a money equivalent.

A consciousness of improvement in the art of teaching is another reward. As her own knowledge increases, the teacher feels a new interest in the various subjects, and is filled with a desire to interest others. She studies carefully to use the proper motives and incentives, and employs all her ingenuity to discover the natural order of presenting truths to the mind. In order that she may constantly improve her teaching, the teacher must daily examine her methods and results. Pythagoras gives the following advice: "Let not sleep fall upon thine eyes till thou hast thrice reviewed the transactions of the past day. Where have I turned aside from rectitude? What have I been doing? What have I left undone which I ought to have done? Begin thus from the first act, and proceed; and in, conclusion, at the ill which thou hast done, be troubled, and rejoice for the good."

The teacher has the pleasure of watching pupils' mental growth. As she stands before a class skillfully presenting some new truth, she should be quickened into enthusiasm

by the sparkling eyes and shining faces of her pupils as they grasp the new thoughts. Their evident enjoyment of the lesson is a reward for the teacher. She should feel amply repaid for the time spent in preparing the lesson. From day to day, as she meets her classes, she can watch them grow in strength; she is not obliged to labor without immediate results. A teacher employed for several years in the same community is often astonished at the rapidity with which the young who come first as mere children, grow into men and women. She watches them with an almost parental interest as they take their places in the ranks of human endeavor. Have they not grown up under her eye, their minds essentially shaped by her mind? Here is one who has become a noted author; another is a brilliant journalist; another bright young man bids fair to become a distinguished artist. Some have become noted leaders in civil affairs; others have entered the professional ranks and have become distinguished for their attainments in science; and nearly all are engaged in various departments of honorable industry. She counts them all as her jewels. Is not this a precious reward?

The teacher enjoys the grateful remembrance of pupils and their friends. Some of the finest moments a teacher ever experiences are those when a parent thanks her for what she has done for his child.

A teacher was preparing to move to new fields of labor on Monday morning. He attended church Sabbath evening and led the young peoples' meeting. After the service his friends crowded about to bid him good-by. One lady came with outstretched hands and streaming eyes, and in a voice of deep emotion, said she could never thank the

teacher enough for what he had done for her boy. She invoked the richest of Heaven's blessings upon the head of the teacher, who by kindness and perseverance had won her wayward son to obedience and duty. Was not that teacher well repaid? The occasional reports that came in after years of that young man's success in life were very precious.

How many of us can look back to our own childhood in gratefulness for some patient, self-denying, faithful teacher! Such never goes unrewarded. Parents and pupils are sometimes slow in expressing their gratitude to the teacher, but in their hearts they are truly thankful, and repay the debt in loving remembrance.

The teacher has the pleasure of being engaged in an honorable, useful calling. Who does not prefer above houses and lands — infinitely above all the wealth of the world, the consciousness of being engaged in a work of usefulness? Man was made for usefulness, and who would not desire to answer the design of his creation?

The very usefulness of the teacher's calling makes it honorable. "It is always honorable to scatter the light of truth." Some of the greatest and best men of the world have been teachers. Confucius, Seneca, Socrates, Aristotle, and Plato were noted teachers of ancient times. Roger Ascham, Edward Thring, John Milton, Froebel, Pestalozzi, Arnold, and a host of others have adorned the profession in later ages. Many distinguished men of our own country might be mentioned, who began their careers of usefulness by being teachers of youth. The teacher's profession is certainly an honorable one; but it is well to remember that "it is not the position which makes the man honorable, but the man the position."

Let the teacher, then, study to improve intellectually and morally, and to advance in the art of teaching. Let her watch the growth of mind under her guidance and be cheered by the encouragement which that affords. Let her consider opportunities for usefulness and the circumstances which make her calling honorable. Let her prize the gratitude of pupils and of their parents and friends. And above all, let her consider the rewards which await those who toil hopefully and patiently for the betterment of humanity.

The twig is so easily bended,
I have banished the rule and the rod;
I have taught them the goodness of knowledge,
They have taught me the goodness of God.
My heart is a dungeon of darkness,
Where I shut them from breaking the rule;
My frown is sufficient correction;
My love is the law of the school.

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