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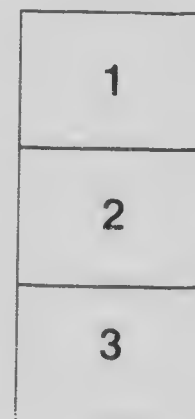
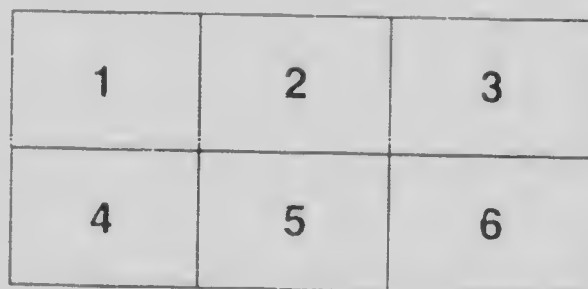
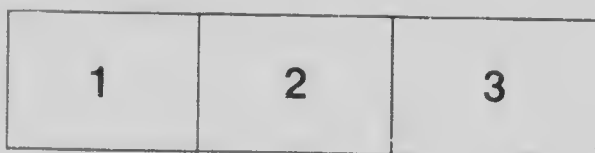
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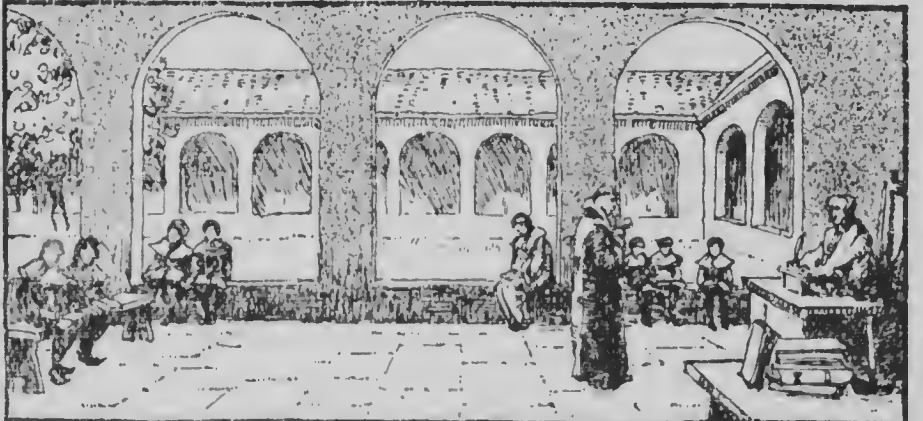


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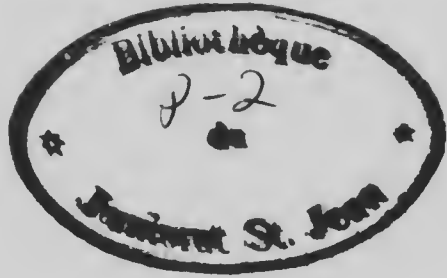
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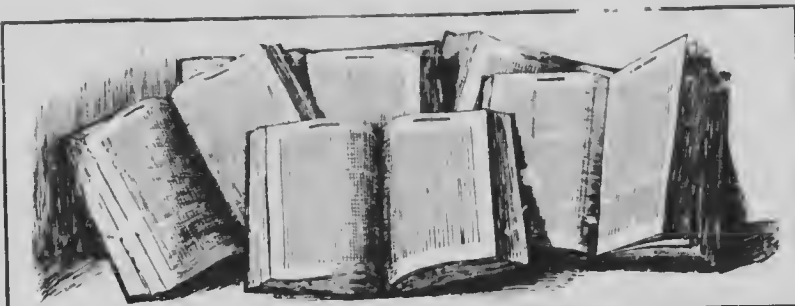
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*Friedrich Wilhelm August Froebel*

The earliest age is the most important one for education, because the beginning decides the manner of progress and the end.

—Froebel



# PUBLIC SCHOOL METHODS

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VOLUME ONE

SCHOOL METHODS COMPANY

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# Twenty-Five Type Studies on Reading, Geography, Scientific Agriculture and History

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NEW ORLEANS

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MONTREAL TO BRISTOL,  
ENGLAND  
ROCKY MOUNTAINS PARK

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WEST

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UNION JACK  
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FOR NORTH AMERICA

BURGOYNE'S INVASION  
WAR OF 1812  
LAURA SECORD  
STEAMSHIP TRAFFIC ON THE  
ST. LAWRENCE  
BRITISH COLONIES

## PREFACE

Public School Methods is the first attempt to furnish the teacher a carefully selected, comprehensive study of the most approved and successful teaching methods, material and devices now used in the best normal and teacher training schools. It is intended to be practical, helpful and suggestive. The entire field of the elementary school is covered, and the work of each subject is discussed, year by year.

The Publishers have been fortunate in securing the services of Dr. James Laughlin Hughes, Chief Inspector of Schools at Toronto, as Editor-in-Chief. Dr. Hughes' name is a guarantee of the high standard of the entire work. Besides the general supervision, Dr. Hughes has contributed a number of valuable type studies. Dr. Charles A. McMurry, the foremost authority on type studies in America, has contributed about twenty type studies on the subjects of Reading, History, Geography and scientific Agriculture. Dr. A. Melville Scott, Superintendent of Schools, Calgary, Alta., and Mr. Thomas E. Clarke, Principal of the Elgin Street Public School, Ottawa, Ont., have also prepared valuable studies.

The important department of Nature Study has been written by Miss Alice G. McCloskey of the New York State College of Agriculture, Cornell University. This department will be found refreshingly different from the usual nature study courses and material. In connection with this department, and closely relating it to scientific agriculture, may be mentioned three timely studies on the Grape, the Fly and the Mosquito. The wide-spread movement to connect more closely the work of the school with the problems of the home will receive added momentum from this department and these notable studies.

Children learn most naturally and readily through play; the influence upon the child mind of a good story well told



is also of incalculable value. It is the experience of most teachers that it is harder to teach children to play properly than to teach them to study. The important department of Story-Telling, Dramatization, Games and Plays has been specially written for Public School Methods, and is intended to be of real, practical service to the teacher. Typical stories and games are worked out, appropriate music is provided, and every effort is made to lead to a proper application of the principles which underlie this branch of instruction.

Special comprehensive chapters will be found devoted to the study of the best methods in Construction Work, Drawing, Music, Domestic Science, Moral Training, etc. The work abounds in illustrative material, such as model lessons, which may be carried without change into the actual work of the class, selections from literature and valuable lists of reference books. The teacher-student is not left alone with abstract principles, but is given practical, concrete illustrations of every principle discussed.

The many illustrations serve the one purpose of explaining the text. In many departments they are used as the foundation of model lessons.

The Table of Contents contains an analytical outline of each chapter, and in the Index may be found cross references by which the teacher can correlate subjects or find quickly material needed for the discussion of any topic.

The Publishers believe in the adequacy of Public School Methods for the needs of any Canadian teacher, whether in a city or in a country school. The highest available authorities have been drawn on to create a work that shall be modern and accurate in every detail. The courses in methods are not intended to remove the necessity of attending some good Normal or Teachers' Training School. They are to supplement the work of such institutions, not to supplant them. All progressive teachers will be quick to realize the value of having as a cornerstone of their professional libraries an authoritative and convenient statement of tested teaching methods, materials and devices.

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## CHAPTER ONE

### DISCIPLINE

Train up a child in the way he should go; and when he is old, he will not depart from it.—*Solomon*.

The aim of true education is the development of power, skill and character.—*Pestalozzi*.

**1. Discipline Defined.** Discipline is that wise adjustment of plans, rules and conditions that keeps the pupils working towards the desired goal willingly, happily, patiently and successfully, without consciousness of friction or undue fatigue.

The school whose pupils are interested and busy, doing their assigned work quietly, happily and at the right time, with no evidence of unpleasant restraint or unrest, and from no other apparent motive than that they love their work and their teacher—that school has reached the highest ideal of proper discipline. Such a school, you may be sure, has a teacher who cherishes high ideals of character-building, and by love, sympathy, tact and patience has brought her pupils into happy fellowship.

In such cases, teacher and pupils are working cheerfully and happily together, loving the work and honoring themselves and one another, the one purpose common to all being to do the best possible thing for the school and for themselves as units in the school. The motto, expressed or unexpressed, of such a school is, "Each for all, and all for the Right."

Perhaps the sorely-trying teacher, working under many disadvantages, may say that such a school in any grade is nearly, if not wholly, impossible. Perhaps most of you may say that in a primary school such results are always impossible.

At this moment we distinctly recall arriving at a small village whose only school building contained but four rooms. Reaching the schoolhouse, we entered the vestibule and



from that at once stepped to the door of the primary room, which stood hospitably open. To our surprise, we saw a room well filled with boys and girls from five to eight years of age, but no teacher. Looking up brightly as they heard our footsteps, they smilingly responded to our "Good Morning" and explained that their teacher was "upstairs, giving the music lesson."

"And you are able to take care of yourselves without a teacher?"

"Oh, yes; we do it every day," came the prompt reply.

"Do you tell her of the bad things you do when she is out of the room?" queried the supervisor, teasingly.

"We don't do bad things," flashed a dark-eyed little girl from the larger group; "we'd be ashamed to. Our teacher trusts us."

A glance sufficed to show that this was the general sentiment of the room, and the visitor hastened to apologize for the unwarranted question and to commend the school for being so truly trustworthy.

Those children understood that their teacher would not leave them except when compelled by other duties, and considered it a matter of loving loyalty and pride to uphold the good name of their room during these unavoidable absences. This was demonstrated again and again during the several days of the inspector's visit.

A few things worthy of remembrance were noted in this case: (1) There was perfect sympathy and confidence between this teacher and her pupils. (2) To guard them against the many temptations that result from idleness, she always assigned definite work for each pupil to do during the half-hour of her absence. (3) She never failed to examine the work on her return. (4) She always thanked the little ones for the good order they maintained during her absence—not always in formal expressions of thanks, but more often by a quick, smiling glance of appreciation or such cordially uttered remarks as "This is what I like to find," "This does me good," "This makes my heart feel

warm," "This makes me happy." (5) This teacher was only twenty years old, and the visit occurred before she had completed her first year of teaching. (6) She had been trained for teaching in a city training school for teachers; and, moreover, she possessed those great essentials to a primary teacher's success, "honest lovingness and patient firmness."

**2. Ideals.** In discipline, as in instruction, the teacher must have definite aims. She must set a standard of character which she wishes her pupils to attain, and then strive so to manage her school that most of her pupils, at least, will approach nearer to her ideal each day. No teacher can succeed in building character unless she possesses high ideals of excellence which she expects her pupils to reach. She must not only form these ideals herself; she must also lead her pupils to do the same. Do not be afraid of the dream side of life.

"The dream side of life is the great side of life. The present and the future are full of new possibilities and of unknown quantities; we can be more successful discoverers and explorers in the child realm than we have ever been before."

"Think what you want your pupils to be ten, twenty years, hence, and labor to set up now the ideals to which, through years, their souls shall grow."

These quotations from leading educators show that the true aim of discipline extends far beyond securing an orderly school. That similar views are held by others may be seen from the following quotations. The first quotation is from an address by Theodore Roosevelt, and it is worthy of careful analytical study by teachers as a practical basis for high character ideals. He said:

I wish to-day to dwell upon this thought—that while in this country we need wise laws, honestly and fearlessly executed, and while we cannot afford to tolerate anything but the highest standard in the public service of the government, yet in the last analysis the future of our country must depend upon the quality of the individual home, of the individual man or woman in that home. The future of this country depends upon the way in which the average man and the average woman in it does his or her duty, and that largely

depends upon the way in which the average boy or girl is brought up. . . .

I wish to see in the average American citizen the development of the two sets of qualities which we can roughly indicate as sweetness and strength—the qualities on the one hand which make the man able to hold his own, and those which on the other hand make him jealous for the rights of others just as much as for his own rights. We must have both sets of qualities.

In the first place the man must have the power to hold his own. I do not much care for the coward or the moral weakling. I want each of you boys—and the girls just as much—and each of you young men and young women, to have the qualities without which people may be amiable and pleasant while things go well, but without which they cannot succeed in times of stern trial.

I wish to see in the man, manliness; in the woman, womanliness. I wish to see courage, perseverance, the willingness to face work, to face danger, if it is necessary, the determination not to shrink back when temporarily beaten in life, but to come up again and wrest triumph from defeat.

I want to see you, men, strong men and brave men; and, in addition, I wish to see each man of you feel that his strength and his courage but make him the worse unless to that strength and courage are joined the qualities of tenderness towards those he loves who are dependent upon him, and of right dealing with all his neighbors.

The second quotation, which is no less valuable, is from a paper prepared by a prominent business man, who at the time was president of the board of education in his city. He said.

The thing is to teach correctly man's correct relation to man and to bring it home so effectually that the child will remember the lesson and practice it during life. The great trouble with mankind is selfishness. The limitations upon personal action should be taught the young. They should be taught that one's own personal rights end exactly where another's rights begin and be taught to observe that line with scrupulous care. . . . I would teach the young that the most honorable man is the honest and industrious citizen who uses all his faculties for his own and society's good, without regard to the capacity in which he is employed.

I would teach them that the man to honor is the useful one, and that the one to shun is the dissolute, lazy one, no matter what his apparent condition in the world, no matter how much money he has or how engaging his personality.

I would impress upon them the beauty and excellence of all things which make for honor, integrity and character, and the hideousness of all things which detract therefrom.

Finally, before leaving the subject of ideals, we would commend to all teachers, for inspiration and help, the *Teacher's Creed*, by Edwin Osgood Grover, emphasizing particularly the following extracts: "I believe in boys and girls the men and women of a great to-morrow. . . . I believe in the curse of ignorance, in the efficiency of schools, in the dignity of teaching and in the joy of serving others. . . . I believe in beauty in the schoolroom, in the home, in daily life, and in out-of-doors. . . . I believe in laughter, in love, in faith, in all ideals and distant hopes that lure us on. . . ."

**3. The Ends of School Discipline.** The ends to be secured by means of school discipline are "(1) to train pupils in self-control and self-direction—self-conduct; (2) to train the will to act habitually from right motives. Among the great occasions for will-training are the development of the school virtues, punctuality, regularity, neatness, accuracy, silence, industry and obedience; also to strengthen the general virtues, truthfulness, good-will, kindness, courtesy, generosity, cheerfulness, unselfishness, honesty, justice and the like."<sup>1</sup>

It is easy to see that the second end is specific and demands specific results; also that the first is general in its nature and when completed the result is, also, general, being no less than the poise and balance of a well-rounded character, a character which embodies all the virtues enumerated by Dr. White.

*Caution.* Note that will-training, not will-breaking, is what is needed, and that the will is to be trained to "act habitually from right motives"—two most important considerations.

**4. Habits.** A habit of thought or of action is caused by repeating a thought or act until it becomes automatic.

<sup>1</sup> Emerson L. White: *School Management*

Then it is called into evidence always by the recurrence of the same condition or others similar to those that first caused it. Habits are strengthened by exercise and die out gradually from neglect and disuse. Hence, it is all-important that the teacher of young children should make a practice of commending by word or manner all evidences of kindness, generosity, honesty, truthfulness or other desirable traits, for the double purpose of inducing the repetition of the same act on future occasions, and, by the law of suggestion, implanting the same idea in the minds of other pupils who may be more or less lacking in the trait commended.

*Caution.* The teacher must be careful in exercising this law of suggestion. Effective commendation requires a perfectly natural manner and tone and must never seem to have any motive beyond what appears on the surface. If the teacher "point the moral" of her commendation of one pupil by so much as a significant look at another who is an offender, she may antagonize the very one she wishes to help.

Whenever possible, it is most highly important that bad habits should be permitted to die out of the consciousness of a child by taking no public notice of them and by guarding against occasions for their reappearance until time blots them from memory. For instance, as Raub wisely says, "Much of the stubbornness in children results from the hastiness of the teacher who antagonizes by commanding. Courtesy is needed more than the command. The child needs encouragement, not censure, to make him do better."

"Bad habits," says Fielding, "are as infectious by example as the plague itself by contact." It is important, therefore, that very young and very susceptible children be kept from associating intimately with those who are known to be untruthful, dishonest or possessed of some other evil habit. On the other hand, the ones thus afflicted need to be kept much with the teacher and treated with the utmost kind-

ness, with no betrayal of distrust. Until the fault is cured, devise constant ways for calling its opposite virtue into activity, commend its appearance and do everything possible to strengthen it. Let this child's playmates be chosen from the older and morally stronger of the pupils who will not be tainted by contact. Thus, with time and patience, the evil habit will be eradicated because its opposite good has grown up in its place. May not right doing be made so attractive as to become infectious by example?

Dryden once rather sententiously remarked, "We first make our habits, then our habits make us," which may be interpreted to mean that character itself is really but the aggregation of our daily habits of thought, speech and action.

*Caution.* In order to secure the great patience, self-restraint and sympathy needed when trying to lead a pupil to overcome a bad habit, try to break yourself of any fixed habit. If difficult for you, a mature person, what must the struggle be for weak, immature wills with no fixed principles of life to help and guide? Bear in mind that self-restraint and patience become habitual if persistently exercised.

**5. Order and Disorder.** There is probably no one thing that so quickly makes or unmakes a teacher's reputation as the reports in regard to the order in her schoolroom. Every casual visitor, official or non-official, feels fully able to pronounce upon this point. Even the youngest pupil sits in judgment upon the teacher's administration and carries home highly colored accounts which have undue weight in determining her status in the community. Finally, she is tersely pronounced "no good" or "all right," according to the evidence that has determined public opinion.

What good order and good discipline are, we have already endeavored to show by examples.

What, then, is disorder? One teacher's definition would be *whispering*; another's, *restless children*; another's, *children who talk too much*; another's, *untidy or uncleanly pupils*. Leaving seats, asking to leave the room, chronic thirst,

coughing, scattering papers, dropping pencils, slates, books, fretting and crying over lessons, annoying neighbors, seuffling of feet, truancy, tardiness, frequent absences—there is no end to the petty trials which singly or in the aggregate we classify as disorder, and when these conditions become chronic in a school we say of the teacher, "She has no discipline," or "She has a very disorderly school."

A facetious individual of a philosophic turn of mind once defined *dirt* as *misplaced matter*. In the same way we might with propriety define *disorder* as *misplaced activity*.

It seems to us that it would be well if all teachers would take the attitude of a skilful, philosophic physician. When one of these disorderly tendencies appears in concrete form in a child or group of children, the first thing is to consider it as a symptom of some hidden disorder for which there must be either a mental or a physical cause. The next step is to study the case until the cause is located. The third step is to remove the cause, and the fourth, and last, is to change conditions so as to prevent the cause from leading the child again into error.

*Caution.* The immediate need may and probably will require immediate action on the part of the teacher, to restore temporary equilibrium pending a full study of the case. Just as a skilled physician makes his patient "comfortable" while seeking for the real cause of trouble and deciding upon the proper remedy for the same.

**6. Whispering.** Whispering is not wrong of itself, but if freely indulged in during school hours it becomes a nuisance, because it wastes the time of the offenders and disturbs other pupils who wish to study or recite in quiet. There are various partial remedies for this trouble. (1) Quietly get the attention of the children and explain the situation clearly to them. Let them know why you object to whispering. Their own good sense shows them the truth of what you put before them, and, if you have their affection and confidence, they will try hard to help you and the school. (2) After your appeal, should there be willful

persistence, separate the offenders by changing their seats so they may not tempt one another. (3) Sometimes give a whispering recess of two, three, four or five minutes as a reward for previous self-restraint, because of which you have finished the recitation a little ahead of time. (4) Give a minute between recitations for pupils to ask necessary questions of you or of their neighbors. This will prevent disturbing recitations by questions, whispered or otherwise, when your time and attention belong wholly to the class. (5) Allow pupils to whisper, very quietly, enough to ask for really necessary things, or to say "Thank you" for a courtesy rendered.

*Cautions.* (1) If these privileges are persistently abused, as they sometimes are, take away the privilege, saying quietly, and without show of irritation, "I am very sorry that I cannot let Carl have the privilege any longer. He does not seem to care to help us by not disturbing the school." After a day or two of deprivation, should Carl plead for forgiveness, get his promise to "remember not to abuse the privilege," and restore him to favor. If the second trial proves futile and he willfully violates faith, take away the privilege for a much longer time, until Carl learns that good faith and helpfulness win legitimate privileges as surely as broken faith deprives him of them; that doing right brings him happiness and sunny conditions.

(2) Do not call upon the pupils to report whispering of themselves or others.

(3) Remember that what seems willful disobedience may easily be the result of forgetfulness or due to a habit.

(4) Deal in a similar manner with those other special privileges of the schoolroom, leaving the room, leaving seats, talking, etc. It is well to arrange a quiet signal code, like the raising of one finger, two fingers, etc., between the pupils and yourself, by which the want may be indicated and the privilege granted without the interruption caused by spoken words.



(5) Keep track of those to whom the special privilege is given, and never allow violations to become chronic. Have it understood that no child may leave the room when one is already out; also, that each child must return to the room in the shortest time possible. These precautions are vital, because laxity in these directions sometimes results in evils very difficult to eradicate or even to trace. For instance, the privilege of leaving the room is based upon a supposed necessity, but it is possible to use the opportunity to rifle pocketbooks, lunch-baskets, or to do other reprehensible things to which those of peculiarly weak wills are liable.

**7. Tardiness and Absence.** Children who are thoroughly interested in their school and who love and trust their teacher will never play truant nor of their own accord be either absent or tardy. The inference is obvious. However, both absence and tardiness sometimes occur even among such pupils. There may be illness at home; the clock may be wrong, or the weather too cold or inclement for their scanty clothing. Every case of absence or tardiness should be investigated in order to find out what caused it, and then no word of blame should be spoken for that which is unavoidable.

The skilful teacher will discover numerous devices which assist in securing promptness; among these are reading or telling an interesting story at the beginning of the session, teaching new games to those who reach the school building fifteen minutes before school calls, and hinting at something that may be done at this time, but keeping the nature of the work a secret, so that only those who come early may know what it is. The teacher who can keep her pupils interested will have few unnecessary cases of tardiness.

Parents or guardians are often to blame for the carelessness of children in regard to punctuality. When the teacher is convinced that parents have lax or imperfect standards in regard to punctuality or to any other department of training

it is wise in a city or town to request the parent to visit the school to talk the matter over. In a rural district the teacher should get the parents, or at any rate the mothers, to meet at the school occasionally during the last hour on Friday afternoons to hear singing, recitations, and the reading of children's compositions, and to examine the drawing and other work of the pupils. Then after the pupils have been dismissed the teacher and the parents should hold a conference regarding the subject which the teacher believes to be most vital to the welfare and better development of the children. Parents soon learn to like a teacher who shows real interest in their children.

*Caution.* There is no other way in which teachers can so quickly lose the respect and confidence of their pupils as by taking advantage of such meetings to make complaints about the children to their parents. Even if the pupils have been troublesome the wise teacher will not refer to any trouble, but will speak kindly and hopefully of her school family. Enthusiasm for the needed reform should be aroused incidentally, as a tactful teacher soon learns to do. In some cases teachers may overstate the negative side of the habit or virtue she wishes to cultivate. We should talk a thousand times more about the value of punctuality than about the evils of tardiness.

**8. Irritability and Sulkiness.** Bad temper should be treated as a disease. It may result from imperfect ambition; from improper food, badly cooked food, sometimes from too much food, but much more frequently from too little good. It may be caused by poor digestion, or an inert liver. It may result from inherited nervous conditions. In any case the child needs sympathy, and kind treatment. Scolding, or censure, or punishment will but aggravate the trouble. "Cheerfulness and Contentment must be kept up. Mobbs come here," said Squeers, and poor Mobbs had to come up to be flogged to make him cheerful and contented. To punish a child for being sulky is as wicked and as stupid as to punish a baby for crying, when a misplaced pin is piercing its body.

**9. Restlessness.** Restless children, those who drop pencils, scuffle feet, annoy their neighbors and do other trying things—what is to be done with them? Study every nervous child. Nine times out of ten its physical conditions are wrong and cause the restlessness. Desk and seat are poorly adjusted, the air is heavy or over-heated, the light is bad, eyesight or hearing is deficient, illness is coming on—any one of a hundred different things may be the cause of the nervous state that is producing trouble for yourself and others. When the restlessness is general, ventilate the room, give a brisk drill in light calisthenics, send the children in a quiet but brisk scamper up and down the aisles and around the room, or let all the children join in a lively motion song. Any of these is a legitimate outlet for the pent-up nervousness, and the change of air and absorbing activity will set the blood into normal circulation and change the thought into a healthy, joyous channel, effectually banishing the restlessness and half-developed mutiny of the moment before.

Suppose it is only one who is restless. If you decide that he is restless because he, alone, needs exercise in the open air, call him to you, quietly send him forth with the suggestion, "Run around the schoolhouse three times as fast as you can go, and then come in." None but you and he know on what errand he has been sent. None but you and he know what his smile and nod mean on his return. But all can see that he now settles happily down to work. Or it may be that he has accomplished all the work assigned and is merely restless and annoying because he is idle. In that case, find pleasant, legitimate occupation for him. See Volume Two, Chapter Two, *Construction Work*.

For the younger pupils, a little more work like that already assigned may be given to fill out the time, or the sand table or blackboard may be brought into use. In case there is need to supply older pupils with extra work to fill the time the teacher may provide from the library or other sources, books and magazines relating to the work

of the week. If references to these are written on the black-board near the table where the books are kept, the pupil can find the articles and interest himself in their contents.

**10. Obedience.** " 'There are two kinds of people,' said the teacher, after all were seated, 'those that command, those that obey. No man is fit to command until he has learned to obey—he will not know how. . . . There are laws everywhere—we couldn't live without them—laws of nature, God, and man. Until we learn the law and how to obey it, we must go carefully and take the advice of older heads. We couldn't run a school without laws in it—laws that I must obey as well as you. I must teach, and you must learn. The first two laws of the school are teach and learn—you must help me to obey mine; I must help you to obey yours. And we'll have as much fun as possible; but we must obey.' " Direct is a better word than command.

Obedience, or rather what passes for obedience, seems to be of many kinds—wing chiefly to differing standards, but sometimes to differing conditions. There are many teachers and even more parents who appear to think that obedience has been secured when compliance has been rendered even at the cost of a great waste of time and a great clash of wills.

Submission is not obedience. Obedience should be one of the most dignified words in the teacher's vocabulary. It is usually understood to mean merely subordination. It really should mean free, full, hearty cooperation on the part of the child, and not conscious submission to a stronger will which rules by fear. Authority loses dignity and respect when it has to be enforced by tyranny. Tyranny in the school or in the home is as despicable as in a misgoverned state. Children love law and are naturally obedient till some term of tyranny makes them disobedient.

**11. Rules or Laws.** Obedience, from its very nature, implies something to obey, and that something we call a

11. Dr. F. Luchella *Darrell of the Bicentennial*  
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law, a regulation. Every school must have definite laws and standards of conduct for teacher and pupils. These laws may be written or unwritten. In some of the best schools we have seen, the pupils, if questioned, might not have been able to quote a single law of the school. There was, however, a sense of law pervading these schools and the pupils were giving tacit, almost unconscious obedience to teachers who knew how to suggest doing or not doing, in a manner to win easy compliance.

(a) CHARACTERISTICS OF SCHOOL LAWS. School laws, to be valuable, must be (1) few in number; (2) clearly understood; (3) perfectly just and reasonable; (4) general in character, to protect the entire school; (5) executed promptly and impartially, serenely.

The best laws always grow out of needs that are general and easily apparent to all. Children instinctively prefer order to disorder, demand fair play, and give greater respect to a teacher who wisely enforces obedience at the proper time than to one who weakly yields to caprice, whims, teasing or tears on the part of the pupils.

(b) ENFORCEMENT OF RULES. A teacher needs to be careful about saying no, but when she decides that she must say it, the *no* should not be changed to *yes*. When privileges are asked, grant them if you can consistently do so. Nothing is ever really gained by playing the rôle of the petty tyrant. Such a course invariably produces antagonism, personal dislike, and frequently the result is avowed hostility and open rebellion.

When there is any doubt about the desirability of granting the request, beware of answering hastily. It is hard to retreat gracefully when once committed to any course. Better say, "Wait a little. I must think that over before I can answer." This, said pleasantly, but decidedly, satisfies the children and shuts off teasing. However, the teacher should keep in mind that little people cannot long bear suspense with patience, and therefore her answer ought to be given as soon as possible. If obliged to say no, the sharp

edge of disappointment may be taken off by prefacing the refusal with a kindly remark: "I am sorry to disappoint you, but I have thought it all over and I am obliged to say no, when I should really like to say yes if I could." This will be all that is necessary when mutual confidence and trust are thoroughly established. The children will bear the disappointment bravely because of their love and respect for the teacher.

As soon as convenient afterward, plan some little pleasant surprise for the pupils and preface the announcement with, "You bore your disappointment so bravely that I am glad to tell you, etc., etc." This is one way of proving to the school that you are glad to grant favors when the good of the school permits it. It also serves as an encouragement to future bravery under trial, and helps materially to establish the habit of cheerful obedience.

(c) PREVENTING DISORDER. After all is said and done, it is the law of prevention that is most needed in a primary school. The teacher with skill in reading symptoms knows almost sooner than the pupil when mischief is about to occur. Sympathy and tact save the situation by a helpful look, a little admonitory shake of the head, a single cautious word spoken at the right moment and in the right manner. "A word fitly spoken is like apples of gold in pictures of silver"—but the word must be fitly spoken!

Cultivate the intuition, to be able to see the beginnings of things. Cultivate sympathy, to be able to see from the child's point of view. Cultivate tact, to be able to render the help or correction needed in the least obtrusive and least offensive way possible. Show children the need of running away from temptation, and lead them in the right way. Children are seldom malicious in their mischief. Children seldom cherish grudges to the point of seeking revenge. They resent insult in word and manner, tone or look, but they even bear punishment without resentment when they see its justice. Frequently, when the case is explained and they are made the judge, their sense of justice compels them to impose

a more severe penalty upon themselves than the teacher would.

**12. Need of More Sympathy.** Oppressed by many cares which rest heavily upon their unaccustomed shoulders, there are many teachers who fail in sympathy, forgetting their own childish heartaches and longings to be understood by the grown-up people of their acquaintance. And from the lack of sympathy such teachers fail to reach the hearts of their pupils, and hence gain no real power over them. Unconscious of their own failing, they wonder why their efforts are futile—but continue their mistaken course.

Very few teachers are really devoid of sympathy for the obvious trials and griefs of a child's life. It is the little things, too small to be mentioned by name, wherein they are most apt to fail. Children are often repressed and restrained when they need but expression and direction. They are corrected when they do wrong, but not commended when they do right.

In a primary school, especially, such comical things are said and done every day and with such perfect unconsciousness as to be droll in the extreme. The teacher experiences an internal convulsion of mirth, but dares not laugh, lest the child's feelings be hurt. Sympathy she must have. She looks up and finds a pair of bright eyes just dancing with appreciation of the fun that no others but himself and the teacher have noted. A single flash of delighted understanding passes from his soul to the teacher's soul. The work in school goes on. No one else has noticed anything unusual, but a bond of friendship has been created. Nor is this mental telegraphy for fun alone. It acts as spontaneously when some unexpected instance of pathos occurs. The case may not admit of words, but a flash of pity is exchanged.

**13. Happiness as a Factor in Discipline.** Happiness is a most potent factor in school discipline, and in a primary school it is probably the teacher's most helpful aid. It takes but a little to make a child happy for a short time. But to keep him habitually happy and contented, so that obedience becomes easy and a matter of course, requires a

deep, far-reaching knowledge of child-nature, a profound sympathy, genuine affection, boundless patience, firmness, gentleness, great tact, keen intuitions, cheerfulness and a large stock of good common sense.

All the qualities that make the best mother are needed to make the best primary teacher—plus training and love of teaching.

To secure the best working atmosphere for the school does not need a costly building or expensive equipments. But it does need cleanliness, tidiness, a cordial, friendly spirit, harmony of action, and the bodily comfort of the children. Give the children a happy atmosphere to work in, an interesting, sympathetic teacher, plenty of suitable work and recreation, and the word discipline will cease to be a source of anxiety and torment. See *Plays and Games*, pages 195-228.

**14. Causes of Disorder.** Among the numerous causes of disorder in the schoolroom, the following underlie them all:

(a) **THE TEACHER.** It will be difficult for any teacher to believe that in herself may lie some, if not all, of the most potent causes of disorder, but to the unprejudiced observer this fact has long been evident. One teacher is wholly untrained for her work and knows not what to do in order to prepare for it; hence, there is a very faulty school organization and no program at all, or but a poor one made without regard to the rules of pedagogy or psychology. Another has had training and has a well-prepared program, but by nature and habit is careless. Hence, her program is of little use, and her hair, dress, desks, tables and floor are in a state of disorder that has become chronic. A third teacher is orderly and punctual, but has a nervous, impatient nature that shows itself in a rasping voice, lack of poise, serenity and self-control. She strikes the bell sharply and every nerve and muscle is tense.

Another teacher presents a sharp contrast to the last—perhaps to all three before named. Her health is superb, she knows nothing of “nerves” in herself and never provides



against them in others. But her voice is loud, her movements bustling, all her signals noisy. She goes through the schoolroom like a human storm. She needs a great deal of fresh air and is reckless of drafts. Her failure is lack of refinement and lack of sympathy for bodily ills and inherited weaknesses. Her pupils will gain little of culture from her example. On the other hand, she is more wholesome to them than the "nervous" teacher who frets, scolds and constantly irritates.

We might go on picturing types of teachers who unconsciously cause disorder and then wonder why it exists and why their children are "so much harder to govern than those in the adjoining room, where the teacher has not had half as many years of experience." It is pleasanter and more effective to note the sunny face, the sweet voice, the tidy person, the quiet, serene manner, the air of motherly sympathy and the evidences of skill in organizing and teaching so clearly manifest in the next room, and the effect of all these so plainly stamped upon her pupils.

We need not draw the moral. Suffice it for our individual encouragement that every effort we make for the sake of our pupils, every grace of mind or body that we cultivate, not only gives us additional power and success in the schoolroom, but each of these becomes a permanent personal possession, opening up a world of happiness never possessed, and scarcely dreamed of, before. It is essentially the verification of the old command: "But seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you."

(b) **PHYSICAL CONDITION OF THE PUPIL.** Bodily comfort is one of the chief factors in good conduct. An inexperienced teacher may not give this matter sufficient consideration, and because of such oversight have a disorderly school. Concerning this, one of our foremost educational writers says:

The power of children to commit or retain lessons and the power to repress anger and other nervous outbreaks are weakened by fatigue of body. Both are more vigorous in the morning than at

ness. Fatigue, too, often produces a melancholy or depressed feeling. A hungry man is harder to control than a well-fed one. Untruthfulness frequently proceeds from a want of courage to face consequences, and lack of courage is frequently due to ill-nourished nerves. A lack of quality as well as quantity of food produces, as observation shows, irritability, ugliness and viciousness. Overwork, worry, tearing of children, help form, or rather deform, character.<sup>1</sup>

(c) **FOUL AIR.** Defective ventilation is one of the most prolific sources of disorder. This will be fully explained in Chapter Twenty, Section 3 (c).

**15. Silent Influences.** The children of the primary grades are in the absorbent stage, easily and deeply impressed by their surroundings. Curiosity is perpetually alert, imagination highly active, imitation excessive. At the same time the will-power is weak, reasoning undeveloped, self-control unknown or exceedingly unstable. In these children, then, all powers and possibilities are in the plastic condition.

Their physical, mental and spiritual growth is greater during these years than at any later period, and their whole nature is more sensitive to influences than ever again. For all these reasons, it is of vital importance that children be surrounded by what will awaken and strengthen pleasant emotions, noble thoughts, kindly affections, fine ideals. They should live in an atmosphere of sympathy, serenity, and harmony. Growth is making great drafts upon their nervous strength, and their environment should not add to this dissipation of force through friction, over-fatigue or the unconscious irritation that comes from uncleanness, unsightly objects, a bad picture, vulgar or profane speech or antagonistic companions. During these years they need a teacher who, without over-indulgence or pampering, calms and soothes; who stimulates their efforts by judicious praise; who sympathizes with their failures, but sets them again at their tasks with a word of direction and encouragement; who is kind under all circumstances; who knows by intuition and study how to arrange colors, adjust lights, make herself a

<sup>1</sup> Dr. M. V. O'Shea.

pleasant object to look upon and her voice a pleasant sound to hear.

In these years, also, there should be for the child many lessons of beauty, usefulness, patience and strength drawn from the great world of out-of-doors. The time will come in his life when he must learn to meet and overcome many jarring, disagreeable obstacles. But he should learn this lesson gradually and his first years be so strongly impressed with the beauty and sweetness of life in its best forms that, later, he will never be tempted to choose what is gross, low or degrading.

**16. Punishment for Primary Grades.** The word discipline should not be made synonymous with punishment, nor punishment with whipping. Discipline is a generic term, including many phases of school adjustment. Punishment includes whipping, but recognizes it as the lowest member of its disciplinary family, one not now in good repute for any school, and least of all for the primary school.

It is our belief that if teachers will become thoroughly efficient in the exercise of the laws of prevention and suggestion, punishment, even in its most limited sense, will be almost unnecessary among primary children. With their susceptible temperaments and keen sensibilities, they crave affection, trust, approbation, honorable position in school. These are perfectly natural, legitimate and forcible incentives to right conduct and rewards for well-doing, and should be used freely until the child has gained the moral strength to do right for its own sake.

When any punishment must be resorted to, it should be inflicted solely to prevent the return of the same offense and never for the sake of "getting even" with the offender. It should be natural and logically related to the nature of the offense. For example, if a pupil abuses the privileges of the playground he must have his recess alone until glad to conform to the established rules. The punishment must be demonstrated to be absolutely just. Punishment must be certain and given in private. Fretting, scolding, shaking or

other personal indignities are worse than useless and only stir up anger and cause loss of dignity and esteem. The same result occurs when a fault is punished to-day and passed over to-morrow.

**17. Rewards and Prizes.** Rewards for effort are natural and should be given freely enough to act as a healthful stimulant, but not so freely as to make the children weakly dependent upon them. Rewards should seldom take a material form. A smile, a look or word of approval, an affectionate pat upon the head are more lasting and more truly appreciated than actual presents. On very great occasions a note of approval, or a report of his record in class, when that is the result of real effort, may be sent home by the pupil to his parents. Whatever the reward, it should always come as the outgrowth of honest effort, not something that is offered in advance.

Prizes, at best, are of doubtful benefit. They usually fall to the one who has the greatest natural ability and not to the one who makes the greatest effort. They arouse, oftentimes, bitter envy and jealousy, and are apt to estrange the closest friends. They encourage pupils to work hardest for material returns, rather than for the higher but less tangible benefits. On the whole, the laws of prize-giving in school "are more honored in the breach than in the observance."

**18. Summary.** The qualities necessary to a fine disciplinarian are tact, self-control, sympathy, charity and love; impartiality, firmness, courage, cheerfulness, perseverance, earnestness, enthusiasm and equability; tidiness, and a cultured voice.

Fortunately, all these virtues and graces may be developed by persevering effort, even when nature has poorly endowed us. Add to these, high ideals, right physical conditions, plenty of interesting work and proper attention to the playground. Add, also, numerous good songs chosen for inspiring sentiment, beautiful melody and nice adaptation to seasons and occasions.

Avoid friction, move along the lines of least resistance, be watchful not to overtax the pupils, and intersperse work with play so as to prevent undue fatigue.

"Be patient with the children's faults and shortcomings. Remember that they come to you from all sorts of conditions and surroundings, and that they are *now* what these environments and conditions have made them. Out of the abundance of a loving and sympathetic heart, *teach them*; lift them up and help them to be what you would have them be. Be ready with 'busy work,' and *keep them occupied*. A thousand times saying 'Be quiet,' 'Don't make a noise,' and 'What are you doing, Johnnie?' is of *no avail*."

"Energy and activity must be spent. Wisely prepare for it. *Watch and plan and work*, forgetting all else but these little ones in your charge, and success is sure to crown your efforts." See, also, *Songs*, page 224; and *Moral Training*, Volume Two, page 248.

Remember that the word translated "train" in the quotation from Solomon at the beginning of this chapter is used only three times in the Bible. It means in each case clearing away the difficulties in the throat that interfere with free breathing. It has no meaning similar to the common meaning given to it. It should really mean clearing away the difficulties from the pathway of the child to allow him the opportunity for free growth. The truly inspiring word "train" has been degraded to mean some form of adult interference with the child. Solomon said "Train in the way he should go." Adulthood almost universally tries to train in the way the child should not go. Most children are told what they are not to do, rather than what they are to do. "Don't" has been the chief word used by parents and teachers in training children. Children have been warned, not guided.

Discipline in the past has been mainly confined to the negative side of the elements of human power and character. We must deal with the positive elements of power and not with the negative if we wish to secure the right kind of discipline.

Self-control formerly meant self-restraint, not self-direction in a achievement, power to keep away from evil rather than power to achieve good. Self-consciousness meant consciousness of personal weakness instead of consciousness of personal power. Responsibility meant responsibility for the bad we do instead of for the good we have power to do. Even the motive to act or to refrain from a tion was the negative motive fear.

A child trained negatively is necessarily an unhappy and therefore a troublesome child. The positive elements of his powers were not called into action for the achievement of right; they naturally were used for wrong purposes, or worse still, became enfeebled through lack of exercise.

One of the most disastrous results of the old discipline in which law was restrictive and not directive was that throughout life the child's attitude towards law was dread instead of reverence.

- 19. Books for Teachers.** *Education.* Herbert Spencer. D Appleton & Co  
*Education and Heredity.* Gayau. Charles Scribner's Sons  
*Children's Rights.* Kate Douglas Wiggin. Houghton Mifflin Co  
*Gentle Measures for the Management and Training of the Young.* Jacob Abbott. Harper & Brothers  
*The Old Training and the New.* J. L. Hughes. Ives-Butler Co  
*Theory and Practice of Teaching.* David Page. American Book Company.  
*School Management.* E. E. White. American Book Company.  
*Common Sense Didactics.* Henry Sabin. Rand, McNally & Co.  
*The Point of Contact.* E. P. DuBois. Dodd, Mead & Co  
*Unconscious Tuition.* Huntington. E. L. Kellogg & Co.  
*The Evolution of Dodd.* W. H. Smith. Book Supply Company.  
*Emmy Lou.* George Madden Martin. McClure, Phillips & Co.  
*The Hoosier Schoolmaster.* E. E. Eggleston. Bobbs, Merrill & Co.  
*Waymarks for Teachers.* S. L. Arnold. Silver, Burdett & Co.

### TEST QUESTIONS

1. Explain how a school may be quiet and orderly and yet not in a condition of good discipline. May pupils be altogether obedient and still be gaining nothing from their obedience?

2. Among those things considered worthy of remembrance by the inspector who visited a school during the absence of the teacher, what seems to you to be the most important? Can you say that the pupils were under the control of the teacher even during her absence? Do you consider it advisable for a teacher frequently to leave her school to its own devices? What legitimate means has she of knowing the conduct of a school during her absence?

3. Of what benefit to the teacher is the study of such an address as that quoted from Theodore Roosevelt? Tabulate the chief points he makes in the quotation of this chapter.

4. What are the best methods to use in breaking up a bad habit in primary children? Do you think that good habits are harder to establish than bad habits? What reasons can you give for your answer? Is the telling of falsehoods a serious fault in small children? Is it a common fault? How would you proceed to break up this habit.

5. Why is it not wise to call upon children for a report of their whispering? What forms of disorder in school are worse than whispering? Formulate a rule which shall tell when whispering is a detriment to the school.

6. What are school laws, and what should be their characteristics? Why should the pupils cooperate with the teacher in making school laws? Why should the laws in a school be few in number? Show how the teacher often weakens the child's natural reverence for law.

7. What is meant by the school atmosphere? How may the best working atmosphere be secured for school children?

8. Name ten causes of disorder for which teachers themselves are to blame. Which five of these are most harmful to children? What are the qualities in teachers most helpful to primary children?

9. What are the natural rewards for children? What are the natural punishments for small children?

10. How far is a teacher justified in working for punctuality and regularity of attendance. Are there any things of greater importance in school than these? If so, what are they?

## CHAPTER TWO

### FIRST YEAR READING

**1. Importance of Reading.** Reading is the most important study with which the child has to deal in the first three years of his school life. The art of reading once mastered, all literature is within his reach and the pupil passes at once from the dependent to the independent stage; hence, it is of vital importance to him that his teacher be skilled in methods that will enable him to learn rapidly with the least expenditure of time and of nervous force.

**2. Methods Discussed.** There are various methods by which the beginnings of reading are taught, viz.:

- (a) The alphabet method.
- (b) The phonic method.
- (c) The word method.
- (d) The sentence method.
- (e) The eclectic method, a union of (b), (c) and (d).

Some writers on reading methods refer to a *thought method*, which is but another name for the sentence method.

(a) **THE ALPHABET METHOD.** The alphabet method, used almost universally in America until about 1870, is now chiefly of historical interest. This method teaches one letter at a time until the entire alphabet is conquered. Then short syllables are taught: as *a-b, ab; a-t, at; a-n, an*, by putting two or more letters together. After the short nonsense syllables are spelled and pronounced, combinations of three letters, then words of one syllable, follow. The next step is joining syllables to form easy words, and the last, joining words to make sentences. The interesting old "horn books" (modern slate with the print protected by transparent horn) were thus graded.

That naming the letters of a word could have been once thought the best and to pronouncing the word is amusing to us now. We see that, valuable as the practice was in spelling,



it was almost useless for the reading of words and sentences. In the alphabet method, spelling becomes all important, and as long as educators believed reading to be an outgrowth of spelling, this method was universal.

(b) **THE PHONIC METHOD.** In this method sounds are used as the basis of instruction. The children are trained to separate words into their component sounds, then to know the letters that "say" these sounds, and finally to combine sounds and the letters that say them to form words. The reasons given in favor of this system are:

1. By whatever method a child learns to read it can never recognize new words independently in any other way than by the phonic method. By other methods the sounds of the letters are learned incidentally—by the phonic system directly.

2. It is a constructive method in which the child learns by process and not by memory mainly.

3. The child makes progress by consciously solving interesting problems from the beginning.

4. The child is self-active in solving all his problems.

5. The sounds and powers of letters are fixed in the child's memory by using and not by memory drills.

6. Knowledge is used in operative processes as soon as it is acquired.

7. It aids in teaching spelling more than even the alphabetic method. Only the irregular words of the language have to be learned. The true system of teaching by the phonic method is to pronounce the words, slowly at first, and ask the pupils to write them.

8. It aids in securing distinct articulation.

9. It prepares the child to understand and to write shorthand when he is older.

If only one method of teaching reading were to be universally adopted, it would certainly be the phonic method; because all methods must use it to make the children independently able to recognize new words; because the learners are self-active from the beginning, and because the child learns to read more rapidly than by any other method.

There are only three steps in the process of the phonic method:

- (a) The separation of words into their constituent sounds.
- (b) The gradual teaching of the letters to represent the sounds.
- (c) Giving the power of coalescing sounds to form words.

The first and third are the two operative processes. They may be explained in two short lessons. It takes time varying from a few days to a few months, according to the child's ability, for them to become automatic.

The second (b) requires so little time that it need not be taken into consideration. See pages 83-92, Sections 24-35.

(c) THE WORD METHOD. The word method, beginning with the first illustrated reading book (*Orbis Pictus* of Comenius, 1657), uses the single word as a unit and, in practice, the entire word is taught without any reference to the letters that compose it. The pictures of the *Orbis Pictus* suggested the names printed below "without using any ordinary tedious spelling." For instance, with a picture of a goose would go the words, "The goose gagleth." The "very looking upon the thing pictured suggests the name of the thing," as Comenius insisted. The child recognizes it as a whole, the same as he recognizes any material object. The word having a definite idea back of it, the meaning appeals to the child and he has less trouble to learn the word-form than a single letter.

The appearance of a word is not the sum of letter-appearances, nor is the sound of it the sum of letter-sounds, as you will find by testing any word. The word has a character of its own, so the word method, which treats it as a distinct thing, shortens the whole process of word learning.

The word method, however, does not give opportunity for extended thought, nor does it give the pupil power to pronounce for himself; therefore, a second and a third step are needed. The second step is to combine words to make a sentence, there being no reading possible until there is a complete thought to be expressed. The third step consists of

separating the words into their elements, to help the child to the independent pronunciation and spelling of new words.

(d) **THE SENTENCE METHOD.** This method makes not the letter, the sound, or the word, but the *sentence*, the unit in reading. The argument for such a method is as follows: The sentence is the unit of thought and holds a higher element of interest than any other thing that may be used; the child recognizes the form of a short sentence, as a whole, as easily as he does the longer single words; by this method he may be taught to read things of value with perfect expression in his very first lesson. As a second step the sentence is broken into its parts. The little reader must know the words and phrases absolutely, otherwise when new groupings of the same element occur he will be unable to recognize them.

This method cannot be used exclusively, because the child must be taught to pronounce new words for himself and because he cannot recognize long sentences as wholes.

(e) **THE COMBINATION OR ECLECTIC METHOD.** This method is a blending of the word, the phonic and the sentence methods. Combination, especially of the phonic and sentence methods, is usually found to be most satisfactory. Moreover, the teacher is able to give precedence to the method which she finds her own particular school most needs. For all of these reasons, then, we commend this union of methods rather than a slavish adherence to any one of them. Indeed, before the child can become able to read independently, portions of all methods will be used, no matter with what method we begin.

**3. How to Unify Methods.** The best results in reading seem to be obtained by beginning with the sentence method, and by using the sentences given by the pupils themselves in reply to questions from the teacher. The questions should always be about some familiar object and framed so that the child will give definite sentences as the answers.

The object should have some definite attraction in itself, be present and passed from one pupil to another for close observation. Thus, there may be a pretty flower, a red apple, a whistle, a top, a ball, a doll, a pet kitten, or any other

object that is easy to get and is attractive to children from five to six years of age. In any case, an informal talking exercise should precede any formal reading lesson, until the children become acquainted and feel at home in the school-room.

**4. Early Lessons.** (a) **THE FIRST LESSON.** Children will soonest forget their shyness and homesickness in some occupation that will absorb all their energies by its interest. Therefore, let each beginner on the first morning, for instance, take the ball in his hands and find out something to tell you about it; or have several different balls, one for each child. One may be of rubber, another of yarn with a bright leather cover; a third may be of celluloid, gayly colored; a fourth, of glass; a fifth, an ordinary baseball.

Call each child by name and get the statement from each, "I have a ball," in reply to your questions, "What have you, Anna?"; "What have you, John?"; "What have you, Dora?"; "What have you, Harry?"; "What have you, Gertrude?"; passed rapidly from one to another. In the same way, get other short, natural sentences called out by the question, "What color is your ball?"; as, "My ball is black." "My ball is red." "My ball is white." "My ball is red and white." Other questions will bring: "My ball is hard." "My ball is soft." "This is a rubber ball." "This is a glass ball." "This is a yarn ball." "This is a celluloid ball."

*Cautions.* (1) Do not hurry the children into nervousness and self-consciousness, but work rapidly yourself, keep interest active and thus get rapid work from the children.

(2) During this and all similar exercises be natural and informal, as in ordinary conversation.

(3) Note peculiarities of speech, make necessary corrections quietly and in such a manner as not to cause embarrassment. "Say it this way, Anna." If the child shows nervousness, pass to the next pupil, without insisting upon compliance.

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<sup>1</sup> Flowers may be easier to get than balls and will have much interest for the class. Children have a double interest in active objects or in those that may be given motion, and in consequence such objects should be used frequently.

One might say, pleasantly, "Anna seems a little shy to-day. I wonder if some one else will help her and say that for her this time?" This promotes friendly feeling, covers the embarrassment and lays the foundation for the much desired spirit of helpfulness.

(b) THE SECOND LESSON. When the reading period comes around again, give out the balls in a different order; recall the sentence, "I have a ball," and say, "Now see me write what you said, on the blackboard." "What is the first word?" "Now the next word?" "And what is it you have?" Write the words as given, in large, clear script, free from shading and other ornamentation. The questions are asked to hold the interest and to concentrate the attention of the class upon the form of the word as you write it.

As you finish the last word, place a period after it, remarking, "Now I have finished writing the statement (or, what you told me) and so I put this period after it to show it is the end. See, it is just a little dot, but its name is *period*. You may all say the word *period* and then you will remember it."

"Who told me what to write on the board?" "Look at the statement and tell it to me again." "How many know the first word I wrote?" "What is it, John?" "Show the word *I* where I wrote it." "Gertrude, what was the next word?" "Harry, show me *have*." "Anna, show me *I*." "John, tell me the first two words." "*I have*—what, Harry?" "Show me where it says *a ball*, Anna." "Tell me the second word, Dora." "Show *have* upon the board." "Now, the last word, Dora." "All tell the first word." "John, touch the last word." "What is it, Anna?" "Read and touch the first two words, Harry." "The last two, Dora." "Read the whole line as I point, class." "Anna, read it alone." "John, show us the 'period.'" "Who remembers why I put it there?" "That is fine. You have all done well. You will be famous readers one of these days. Now pass to the board and see if you can write the word *ball* as I wrote it."

*Cautions.* (1) The above reading lesson will be easily accomplished in ten minutes or less. Spend the remainder of the fifteen in guiding the little hands as they try to write on the board.

(2) During these blackboard lessons be very careful not to question so as to cause the child to separate the article from the noun. That spoils the phrasing so essential to smoothness and expression in singing, talking or reading.

(3) Teach children, by constant example and usage, to pronounce *a* or *the* as if it were an unaccented syllable of the noun to which it belongs.

(c) PUNCTUATION MARKS. Make no attempt to define the terms "statement" or "sentence." The children gradually learn the meaning of the words from the way you use them; also that some of the sentences tell something; some ask something, and others command something. Thus you combine language with reading, adding to the child's knowledge and vocabulary.

The period and question mark are the punctuation marks in constant use during the first year's lessons. Teach their uses by saying as you use them, "We put the period at the end of what we write," or "The question mark is placed here to show that we are through writing a question."

Keep in mind that marks of punctuation are to indicate grammatical structure, and do not teach the child to think that these marks control the pauses made in reading aloud. The reading is solely to interpret thought and feeling pleasantly, and the sentiment alone controls the pauses. Thus, an interrogation point sometimes is followed by the rising inflection and sometimes by the falling. The period is usually followed by the falling inflection of the voice and a full stop. In negative sentences, however, or in those wherein strong doubt is expressed, the period is followed by the rising inflection or by a long pause of suspension, according to the exact meaning to be conveyed. The child needs to be trained to keep his mind concentrated on what is to be expressed and to get into hearty sympathy with the thought and feeling

in each sentence or paragraph. When this is invariably followed, the expression, as a rule, will be correct and the pauses be naturally placed without any direct reference to them. Reading as an art is taught long before it may be studied as a science.

(d) THE USE OF CAPITALS. In a similar way, the pupils, during the first year, may be taught three facts in regard to the use of capitals in writing, viz.:

(1) People, when writing, begin every sentence with a capital letter.

(2) Every written name of a person must begin with a capital.

(3) A geographical name, when written, must begin with a capital.

When a teacher has occasion to write any sentence upon the board, that sentence must always have all the capitals and punctuation marks used in their correct places, that the constant example may help to establish for the pupil the law of usage.

When any sentence is drawn from a pupil in the reading exercise, and the teacher turns to write it, she remarks quietly, "I must begin this first word with a capital letter, so that everybody can tell where the sentence commences," or "to show just where the sentence begins." Occasionally question: "What kind of a letter did I call this?" "Why did I begin the first word with a capital letter and not the others in the sentence?" No need to take appreciable time for it. The frequent recalling establishes the usage. Make no attempt to define the word *capital* beyond substituting the word *large* in its stead at times.

When it first happens that the name of a pupil appears in a sentence, the teacher remarks as she writes: "Now this is Harry's name and I shall begin it with a capital *H*, so that we may pick it out quickly from the other words, for that is the way people write." Speak in a similar manner whenever the opportunity occurs, till the rule for names of people is learned. In this way the rule for writing names of places may be taught.

**5. Later Lessons.** (a) REVIEW. In the next reading lesson take the balls, recall for the children the sentence "I have a ball," and write it quickly and clearly upon the board. Then get such sentences as, "I have a red ball," "I have a round ball," "I have a pretty ball," by questioning, and write each sentence as given. Treat the phrase *I have* as a unit, now, in the reading. Drill upon the new words as before. Then quickly write on various parts of the board, "a pretty ball," "a red ball," "a round ball," a great many times; also in other parts of the board "I have." Ask one child to point out and another to read each of these phrases. Then do the pointing yourself, calling upon different children to read. Work very rapidly, but very carefully. When any child fails, have another tell him and then see that the first child is called upon at intervals until he is sure. At last, send the class to the board. "John may erase *I have* everywhere he finds it written. Dora, erase *a pretty ball*. Harry, *a red ball*. Anna, *a round ball*, everywhere you can find it." So continue your directions until all the phrases are erased.

Previous to the lesson just given, you should have written on the blackboard the four sentences given above in order, in reverse order, and again in irregular order, and draw a curtain over them. After the phrases have been drilled upon as above, draw back the curtain; treat the entire sentences as follows: "Anna, read the first sentence;" "Gertrude, the second;" "Harry, the third;" "John, the fourth;" "Dora may read all of them." Treat in the same way each group of sentences. At last, erase as read.

(b) NEW LESSON. The following lesson should introduce a change. Recall *I have*, and then by use of proper objects and questions work out the following sentences:

I have a flower.

I have a red flower.

I have a pretty flower.

I have a pretty red flower.

Drill on these sentences and phrases as before, using also the word *ball* singly and in phrases.



We may next introduce a new verb. For the sake of the action, this new verb may well be *find* or *bring* or *show*. The reading lesson will be preceded by a talking exercise in which the teacher constantly uses the new verb in her requests, and this lesson when written upon the board may be:

- Find a red flower.
- Find a round ball.
- Find a pretty ball.
- Find a pretty flower.
- Find a red ball.

After a quick oral drill upon the above, the teacher points to the first sentence, saying, "Read this sentence to yourself, Harry, and do just what it tells you. All the rest watch carefully, to be ready to help Harry if he makes a mistake." Have sentences read and verified thus from first to last, in reverse order and then irregularly, pupils reading and working silently all this time.

This is the pupil's introduction to silent reading, as such, but from this time no day should pass without requiring some work of this kind, to beget carefulness. In fact, at no time during the first year should the pupil be allowed to read any sentence orally until he has taken time first to read it silently. This course, rigidly adhered to, is of the utmost value, as it teaches the child how to study and prevents the many bad habits resulting from inattention or trying to do things without preparation.

(c) ACTION SENTENCES. As a child's life is largely made up of action, action sentences may well be used in the process of learning to read. In giving a sentence for the first time, use the child's impulse to imitate. If the word *hop* is to be used, write it on the board with a capital and a period, to show that it is a complete thought. Then let the teacher perform the action, so the child may make the connection between the word and the action. Lastly, let the children who can "read" the sentence perform the action, or select





CAN'T YOU TALK?

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a slow child to perform it, and later let him "read" the sentence, e. g.:

Hop.

Hop to me.

Hop to the door.

Run.

Run to me.

Run to the door.

Run around the room.

Hop around the room.

Other verbs that should be taught early in the term are *run, jump, walk, fly, skip, hop, bow, look, open, shut, give, take, throw, shake, laugh, cry, sing, ring, roll, bound, drop, arise, come, go, stop, hide, bring* and *show*. All verbs of this class are easy to teach, because the meaning is shown in each case by the action the word represents. Such words as *is, are, and, but, for, if*, and the like, must be taught in phrases and sentences without attempt at definition. Pupils gain the meaning by inference.

(d) PICTURES AND READING. The value of showing illustrative pictures with sentences, beside adding interest, emphasizes the *meaning* of the sentence as it is read.

If the teacher can draw on the board, however crudely, she can give meaning to a vocabulary insisted upon by the superintendent. Perry pictures and other illustrations are now so cheap that a list of words may be readily made into interesting reading through their use.

From the picture, *Can't You Talk*, a first grade teacher made the following reading lesson. All but two words in the lesson were in her required list:

What do you see?

I see the dog.

I see the baby.

I see the cat.

The baby looks at the dog.

The dog looks at the baby.

Good morning!

Bow-wow!  
 What do you say?  
 Bow-wow!  
 Can't you talk?

The teacher showed the picture, and after the children had studied and admired it, wrote the first sentence on the board. The remaining sentences were either given first by one child and read by another, or supplied by the teacher, constant reference being made to the picture. Later, the teacher made a chart page of the lesson, pinning the picture above.

Nouns are illustrated by objects, pictures, etc. When the first pronoun is given in a lesson, the teacher quickly shows how unpleasant it would be to keep repeating a person's name. "And so we use the word *he* to make it sound better, that is all."

Conversational terms and phrases should, also, be early taught in connection with the blackboard lessons and freely used in such lessons to give greater naturalness and variety, both qualities being necessary to prevent loss of interest and consequent monotony of expression. The phrases and words best adapted to such use are *Good morning; good night; how do you do; if you please (or, please); thank you; good bye; by and by; yes; no; certainly; do you; will you; can you; who; what; why; when; where; there; very soon; at once; immediately.*

The teaching of these words should not be hurried. Teach and use one until learned, then introduce another. Change the position of such words and phrases in the sentences very frequently and be sure that each one is taught and remembered as a *unit*, the same as a single word. Continue their use in blackboard lessons throughout the first few months.

To lend greater interest and promote natural expression in these early lessons, be careful not to dwell too long upon the statement. Follow the suggestion given to teach and use a variety of action words, thus getting the command (imperative sentences) established. Also, teach the interrogative sentence form by questioning in such manner as to get a question from the child that may be woven naturally

into the lesson. The lessons containing these three forms are far more interesting. Introduce exclamatory forms, also, when the subject permits.

(e) OTHER LESSONS. Other blackboard lessons may be worked out and drilled upon in ways similar to the above, combining the sentence method and the word method as shown. Each day give two or three new words, reviewing the previous ones. Keep the sentences very short for the first month, but make a great many new ones from new combinations of the same words and phrases. Before the end of the first term from ten to fifteen sentences are used in one lesson. Occasionally you should fill one entire period with review work, giving no new words.

The great causes of hesitation, repetition, stumbling and mistakes in reading during the first three years are due to timidity and uncertainty in regard to the forms of the words in the sentences the pupil attempts to read. The great need is, first, to win the confidence of the child and then teach each new word so thoroughly that he cannot forget it nor mistake it. To this end, as before said, always require the child to read the sentence silently before he tries to read it orally. Train all to look carefully at each sentence given to see if they can find any new words there.

Another fruitful cause of trouble for the child is introducing both articles into the lessons of the first week, or two forms of the same verb. Introduce *have* thoroughly, if you begin with that word, before giving *has* or *had*. To use the second article too soon is sure to result in too much emphasis on the article and in separating it from the word following, thus destroying smoothness and expression in reading.

*Caution.* The teacher who has the first year pupils must hold herself responsible for the habits they acquire and prevent bad habits by establishing good ones.

**6. Oral Reading.** Good oral reading is voicing the thoughts obtained from a written or printed page in a manner to please the listener, as well as to interpret the author's sentiments correctly. This necessitates (1) the instantaneous

recognition of word and phrase forms, (2) a clear, distinct articulation, (3) a pleasant voice, (4) an unconstrained manner, (5) a natural expression, (6) an understanding of and sympathy with the thought and feeling expressed by the author, (7) forgetfulness of self.

All this is a matter of course when the child expresses his own sentiments to a sympathetic listener with whom he feels no constraint. The same results are quite possible in the reading of the first year pupil. Thorough work must be done in teaching the word forms; bad habits must be prevented, and the child taught to read every selection just as he thinks the author would say it if he were present. In other words, from the outset, the pupil should be trained to read *for* the author, and *to* the teacher and class with the direct purpose of pleasing them.

**7. Local Errors in Pronunciation.** In every school there are faults of articulation and peculiar pronunciations of words; therefore, the teacher should be alert to detect and note such errors for the purpose of eliminating them from the school.

Suppose there is a general habit of dropping the final *g*. Say little about the fault, but write a list of words ending in *ing* and, at the time for phonic drill, have the entire school unite in pronouncing these words after you. From top to bottom, bottom to top, across the rows, skipping about, use all ways to keep the pupils on the alert to follow you.

It may be that several local errors of pronunciation exist. Pupils may have great difficulty with words ending in *sts*, *pth*, *dth*, etc. Use the same general plan, drilling upon such words as *fasts*, *mists*, *posts*, *hosts*, *boasts*, *height*, *breadth*, *depth*, *length*, etc. In addition to the lists, write sentences containing words that are difficult to enunciate clearly; as,

Swim, swim, swim! swim o'er the sea;  
O'er the sea, swim, swim, swim back to me.

In case there is a marked tendency to blend words unpleasantly, give such sentences as these: "Did you say ice cream or I scream?" "An ice house or a nice house?" Should

there be much of the foreign element among your pupils, there will be trouble with the sounds of *th*, *v* and *j*. Give much drill upon words commencing with these letters, showing the pupils exactly how to adjust the vocal organs to make the sound desired. This explanation and precise showing will also be necessary in teaching the difference in the sounds of *d* and *t*, *f* and *v*.

When unpleasant blendings of words occur, the fault is generally caused by the failure to separate the lips after speaking one word and before speaking the next. Indistinct articulation is generally caused by keeping the lips too much closed, by closing the lips before the word is fully uttered or by keeping the teeth too closely shut while speaking. Each fault suggests its own remedy and the teacher should overcome these, one by one, by persistent drills.

The foregoing faults are apt to be more or less general to the school, and hence the entire school may, and should, participate in the phonic drills suggested, the youngest and the oldest together.

Lists of words and sentences for this drill should be carefully prepared and clearly written upon the board. The curtain may be kept over them until they are needed. Begin each of these drills by exercises in deep breathing, the pupils standing, with the windows open for a minute to freshen the air of the room.

**8. The Alphabet.** The alphabet is not directly taught as a feature of any reading lesson in the first term or later, but is used as follows: On one or more pages of the reading chart you prepare for use in the first term, have rows of proper names in straight line, capital (print) letters which the children are able to copy with the short colored sticks used by kindergartners, or with the less attractive toothpicks. Other names involving curved lines may be copied with the colored sticks or with shoe pegs. (See pages 42 and 43.) Bright colored beans or kernels of corn also may be used.

For the very first lesson of this kind it will probably take all the time to show each child of the beginning class his



own name and have that name made and examined. Nothing but individual work will answer until the children learn how to follow general directions. As the teacher examines, she says, for example, to one, "See here, Emma, you have made your *E* turn the wrong way. Now look at the *E* on the chart [pointing to it] and make yours just like it." After a little she returns to Emma and commends her improved work. To another, "Your *W* is upside down; see how it is on the chart."

There is no apparent effort to teach the names of the letters. The teacher uses the names as a matter of course and the children learn them soon from the law of association.

The proper names are given first because of their greater interest. After the child makes his own name correctly he tries to make that of his neighbor or friend, then the names of all the class as he becomes more expert. A new step is to make other words than proper names in the same way. Later, boxes of alphabets are distributed for the busy work, and the class builds sentences as well as single words.

The names of the letters are also used in the penmanship lessons as the teacher gives new letters to be written or corrects errors that have been made. As soon as he has gained a little control of his hand, the child may be required to copy in script, once a day, new words from his reading lesson, using the letters intelligently. Any copying he has done previously in script has been merely imitating the letter forms without any reference to their names, his mind being held to the word and not to the letters of that word.

In this informal fashion, the child, by the end of the first year, usually knows the names and forms of all the letters, large and small in print and in script.

**9. From Script to Print.** To make the transition from script to print easy and natural, the teacher should keep in a notebook, for her own reference, lists of all the words the pupils have learned. From this list, she may write columns of words and, in parallel columns, for a few days only, print the same words, giving occasional drills upon them. Later,

the same words may be used indiscriminately in print or script. Call two children to the board, giving a pointer to each. The first child points out and names a word in the printed column, and the second shows and names the same word in the written column, the rest of the class acting as critics. When an error occurs, two others should be called to the board to do the work.

As a further and more difficult device for the same purpose, write a sentence and just below it print the same sentence. Require children to read the sentences from the script, but follow the printed ones when building the sentences for busy work from the boxes of alphabets distributed for that purpose.

Again, the teacher may say, "I want to write your name, Anna; what letter shall I write first? the next one?" etc., until the name is done, the child having the printed form for reference. To test the knowledge of the child, the teacher occasionally writes a wrong letter.

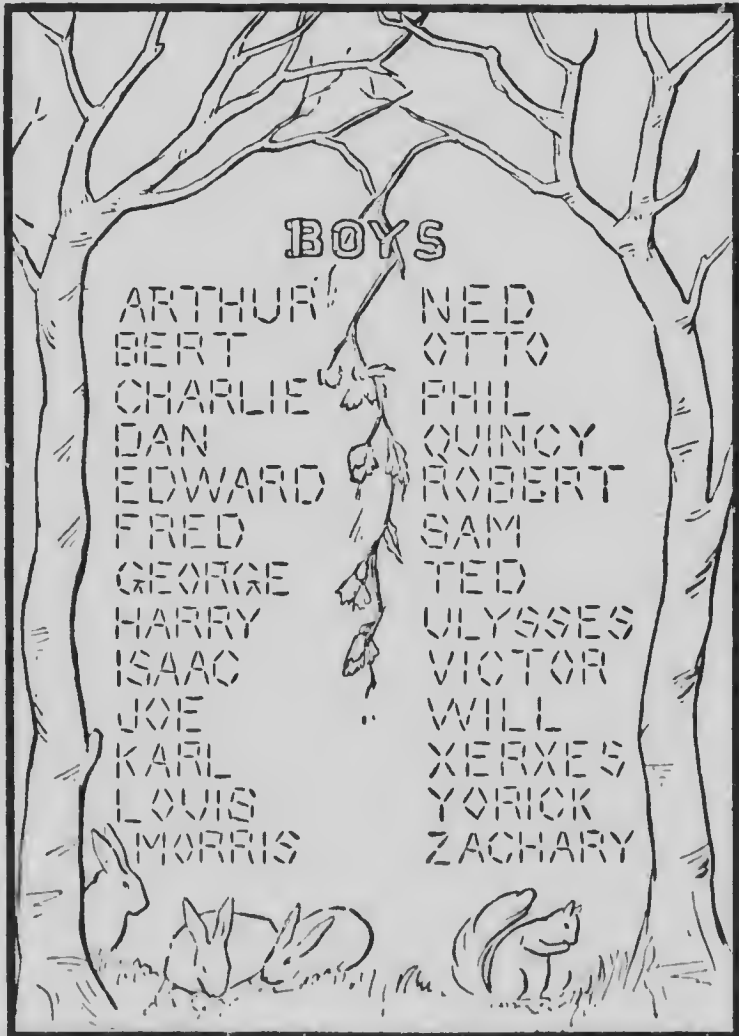
If the teacher uses for her blackboard work a perfectly plain, large script, with little or no slant, the difficulties will be materially reduced, because such script is very similar in form to the usual print. But, in any case, the devices suggested, with others that the teacher will be apt to think of, persevered in for a little while, will certainly clear up all doubt and the child may be given either script or print without causing the least hesitation on his part.

**10. Chart Making.** When the blackboard space is sufficient, a large part of the work just outlined may be presented from the board. When there is but little room, prepare chart pages and use them for the drills. These charts, once prepared, may be used for several classes of pupils.

The work on the chart is better done by the aid of stencils, brush and India ink, rubber pen or heavy stub pen, and arranged neatly and evenly. Lines very faintly ruled on chart or blackboard will serve to keep the work in straight lines until the teacher's eye and hand learn to work in such unison as makes these guide lines unnecessary. For general

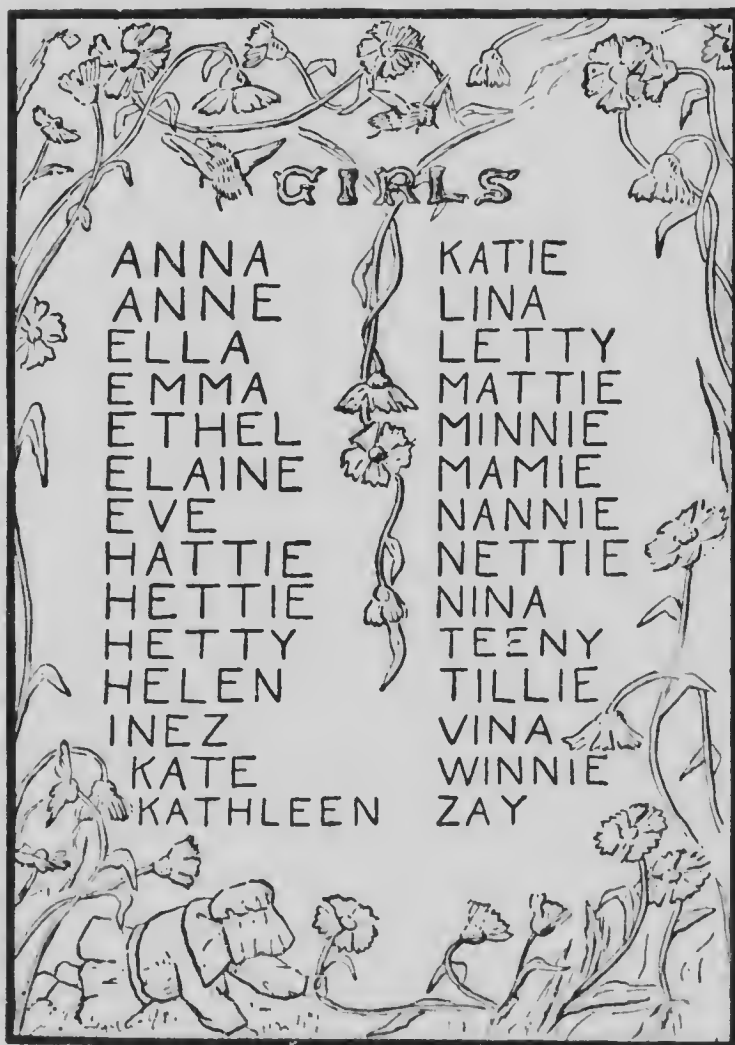
directions, refer to suggestions upon chart making, in Lesson Twenty-one, Section 4, (d).

11. Adaptation of the Method to the School. It is neces-



The names on this page contain all the letters of the alphabet and show how the letters may be made by laying toothpicks or skittles.

sary to keep in mind that the eclectic method is a combination of four elements and that in lessons and seat work together the child is getting daily benefit from the best features of



The names on this page may all be made with straight lines. The border shows with how few lines pretty decorative forms may be drawn.

all four. From the use of sentences he learns to gather thought, which is the true basis of all reading. From the recognition of separate words and the added word drills, he learns to translate familiar ideas, heretofore expressed in spoken words, into their written or printed forms, and gains much needed practice in correct pronunciation. From the training given upon phonics and the alphabet, he gradually learns to help himself to new words, all of these together constituting what is generally called the mechanics of reading, an essential and fundamental part of learning to read. And learning to read must precede reading to learn and learning what is best to read, the other two parts of the work in reading.

When a teacher has to deal almost wholly with children of foreign-born parents, there must be a great deal of the word method and a great deal of the phonic method. Such children hear no English spoken at home, and the ear is necessarily slow to catch and discriminate among the sounds of English words. With such pupils it is usually better to begin with the teaching of single words, rather than sentences, giving frequent drills upon the pronunciation of common words and upon giving, after the teacher, the various vowel and consonant sounds without reference to the diacritical marks. After a limited number, say twenty-five, of nouns, common adjectives and verbs are thoroughly learned, give these children combinations of the familiar words in phrases and short sentences, and then proceed as with children of American-born parents.

If the beginners are about equally divided between native and foreign, it is sometimes desirable to start one division with the sentence method and the other with the word method, giving those of American parentage longer lessons, since the others, naturally, will need more time and more individual work. The two divisions may be united for the drill in phonics, and the greater part of this drill may be given in concert, especially until the timid little foreigners have gained courage to recite alone without painful embarrass-

ment. Concert drills, however, may help to perpetuate incorrect enunciation, unless the teacher watches the utterance of each child very carefully.

There can be no arbitrary rules laid down as to the use of this or that method, how long to continue one or the other, or how much of one to give or how much of another to omit. One thing, however, is certain: There is not now, and never can be, any one method that will cover the teaching of reading and make the work equally easy and pleasant for all the pupils.

Children enter the lowest primary grade at ages varying from five to seven years. They have known great differences in birth and in home training. They are by nature differently endowed. Some are distinctly *eye-minded*, others as markedly *ear-minded*. Some have perfect eyesight and hearing, others have defective senses. Some are alert in mind and body, others slow. Some are wide-awake, seeing and hearing everything about them quickly and to the last detail; others seem to be in a half dreamy state, seldom rousing to full activity of body or mind. Therefore, as long as the teacher has such complex and varying elements in the school—and that will be as long as there are schools!—there must be an adaptation of methods to suit the needs of the school and of the individual pupil. Moreover, this adaptation must be made by the teacher herself, upon her best judgment, after a careful study of the situation.

The methods suggested herein are such as have been tested over and over by ourselves and by others, and they will give excellent results when followed intelligently. However, they are not intended for slavish imitation. Their purpose is suggestive rather than restrictive. The teacher's own good sense and intelligence are left untrammelled as to minor details. The responsibility for the choice of method rests so certainly upon the teacher that a thorough understanding of the principles is the least preliminary preparation that can be tolerated.

**12. Subjects for Blackboard Lessons.** Children of small villages and of the rural districts enter school with their heads well filled with ideas that they have gathered from their environment, viz., ideas of the home and family; playthings and games; domestic animals; wild animals common to the locality; birds, insects, fish, trees, flowers; some knowledge of occupations and productions and other things difficult to classify and far too numerous to mention in detail. Moreover, they have acquired a stock of possibly two thousand words, several hundred of which they use freely in conversation. Hence, instead of "knowing nothing at all," as is often claimed, they have a most valuable fund of knowledge with which to begin school life.

On the contrary, they know little of the full value of books. Having no knowledge of written or printed word forms, the treasures of thought and feeling in books are entirely beyond their grasp. That they will be able to help themselves to all the delightful things in books as soon as they have learned to read is the great incentive to be kept before the entering classes, to stimulate effort.

There is no fixed law and no uniform practice as to what shall be used as the basis of the earliest lessons in reading. For a week or a month most teachers prefer to select from the stock of ideas and words already known to the children.

This leaves but one new thing to teach, and that is the form of the words. The eye must now learn to recognize what the ear has long been familiar with. Thus they "proceed from the known to the nearest related unknown," and there is every reason to expect rapid advancement.

However, this course is not universal. There are very successful primary teachers who prefer to draw from something entirely strange to the children for the first lessons, the argument being that novelty lends interest. Thus, a picture, new to the class, may be used as the basis of the first lessons in talking and of the reading lessons that grow therefrom. Again, something from literature is used, as *Jack and the Beanstalk*, *Cinderella*, *The Three Bears* or *Hia-*

*witha*. For ourselves, we prefer to follow the familiar path, at first using tangible objects as illustrations. This plan forms a natural link between home and school and soon helps the child to a good list of written or printed words from which he is able to interpret the thought he finds in sentences.

It is but a step from the actual object or act to the pictured one; hence, pictures may be introduced early as the basis of work. Any simple picture of people or familiar animals, attractively grouped to suggest pleasant thoughts, will be suitable.

For the first month, introduce not more than one new picture a week, new ideas not being needed so much at this juncture as the power to interpret familiar ideas through new forms of familiar words. The sooner this is taught, the sooner the child begins actual reading and takes the first steps towards independence.

In the last part of the first year a child will easily read many things from the Mother Goose rhymes; also, certain folk lore tales that have much repetition in them, as, *The House that Jack Built*, *The Old Woman and Her Pig*, *The Little Red Hen*, *The Story of Chicken Little*, and so on. In Mother Goose rhymes, the familiarity and the rhythm lend the child material aid; in folk lore, the numerous repetitions and the great dramatic interest make the reading easy for him.

**13. How Long Shall Blackboard Lessons Continue?** Answering the above question in general terms, we would say, "All through the first three years, particularly in all schools where books are few and supplementary reading is scarce."

However, those who ask this question usually mean, "How long use the blackboard exclusively for the reading lessons?" To this we answer that there is no fixed rule. In the city, teachers often give the lessons on the blackboard exclusively during the entire first term of school. Others continue the exclusive use of the blackboard for six weeks; others for four weeks, and still others give some lessons from the chart or primer at the end of the first week and sometimes introduce



the child to both the blackboard and the primer on his first day in school. We have tried all these ways, and as a result of the trials would suggest that the chart or the primer be introduced at the latest after a few days. This plan has a certain advantage in that it serves to satisfy the child and his parents that he is really reading. In some places, especially in less advanced localities, the blackboard lessons do not always satisfy the preconceived notions of what reading should be.

However, the blackboard should certainly be used for at least half of the lessons daily all through the first year, because results can be accomplished much more quickly than by adhering closely to either the chart or the primer. By the aid of the board, the teacher can give any amount of original reading matter and make the drill work far more interesting, personal and effective than from any book. The use of the chart or primer, or both, in addition to the board, lends, in the minds of the children, an air of greater importance to the lessons and furnishes greater variety—two highly desirable additions.

Certain things should be borne in mind when the child is given the chart or primer early:

(1) The chart, if prepared by the teacher, has the same words as those given in the original blackboard lessons, but arranged in different order and used in different sentences. Thus, the best kind of review is always at hand, viz., the same vocabulary in the form of new stories.

(2) When a reading chart has been furnished by the school district it is not as good as one that the teacher can make, but it should be used. In that case, the teacher should use the words given on the pages of the chart in preparing her original stories for the blackboard, in order that the chart may furnish the review.

(3) Unless the teacher makes her own chart, it is better to leave the use of the primer until after the child is quite familiar with the first half of the chart, to prevent the confusion arising from so many different vocabularies.

(4) When only the home-made chart is used, the black-board stories, the chart and the primer need cause no conflict or confusion, if used alternately.

**14. Introduction to Books.** It is a great event for a child to own a book; and when a beautiful new primer is ignored for weeks by his teacher, school life loses a good deal of its anticipated joy. The book becomes an old story and is apt to become much disfigured before it finds its legitimate use. For these reasons, if the beginner comes equipped with his primer, the teacher should take proper notice of the fact, commenting pleasantly upon its beauty and freshness and the need of being very careful in handling it in order to preserve its beauty and cleanliness.

Afterward, she may explain that she is not quite ready to use it yet; that there are some other lessons to come first, and ask the privilege of keeping the book safely in her desk "for just a few days." The "few days" must be few, not more than two or three at most, before the book is brought out, the first picture talked about, and some words found that have already been given on the board. Even on the first day, it is better to use the primer picture for a talking lesson, if the child seems too much disappointed; the great thing on that day being to win confidence and make the pupil feel at ease, so that he will respond freely to questions and adjust himself to his new environment.

Establish, the first day, the habit of collecting the books after the lesson is done. Give the child suitable seat work and keep him so occupied that he will forget that his book is not in his own keeping. Show him exactly how to hold his book to the best advantage for use and how to preserve it from defacement. It may, and probably will, take a good many repetitions of direction and encouragement before these important habits are established.

**15. Supplementary Reading.** Any reading given to the child in addition to that in his regular reading-book is commonly called supplementary reading. This is given to insure greater proficiency in the ready recognition and pronuncia-

tion of words and phrases, to promote greater efficiency in gathering thought from sentences and paragraphs and to develop fluency in oral reading.

In the first year there are various sources that may be drawn upon for this reading:

(1) Original stories may be made by the teacher and children together as an outcome of the informal conversational (language) lessons upon such familiar and interesting things as pictures, games and facts in natural science. These stories may be presented to the class in the form of blackboard reading lessons exclusively, until the pupil is able to recognize printed words and sentences as easily as written ones. Then these lessons may be given wholly or in part in the form of leaflets prepared by the teacher by use of the hektograph. These leaflets may or may not precede the use of the primer. They are easier to handle, but they are not so attractive in appearance as the book.

(2) When the district supplies several sets of easy primers, they may be used as follows: After ten pages of the regular primer have been read, use ten pages from another primer and then ten from the third primer. The regular primer lessons may come in the first reading period of the day and the supplementary reading be used in the afternoon. Sometimes make a change by reversing the order. Continue till at least three primers are read through during the first year of school.

(3) When it is impossible to get the additional primers in sets, the teacher should provide herself with two or three of the best primers. From these she may use, on blackboard and on hektograph leaflets, all the material needed to supplement the stories and poems of the regular primer. This will give practically the same result for the class, but entails more work upon the teacher.

(4) From educational journals and from magazines for young children, short, easy stories and poems embodying virtually the same vocabulary as that used in the required primer may be selected. Copy these upon the board or





GOOD MORNING, LITTLE RED RIDING HOOD, SAID THE WOLF

hektograph from time to time and use them for supplementary reading.

*Caution.* The teacher must bear in mind that from one or all of these sources a large quantity of supplementary reading, suitable in grade and quality, must be obtained, since it takes much easy reading to make reading easy to first year pupils.

**16 Preparation of a Lesson.** In making up a reading lesson (the one given below, for example), let the teacher try to consider the following points: (1) It should contain a thought of value; (2) it should be interesting to children; (3) it should be in dialogue form, where possible; (4) it should be simple as to vocabulary and construction and thought, and (5) it should be full of repetitions.

Suppose you have written or found in the reader the selection:

LITTLE RED RIDING HOOD

Lesson I

Once upon a time there was a little girl.

Her grandmother made a little red hood for her.

Then her mother said, "Now your name is Little Red Riding Hood."

One day Little Red Riding Hood's mother said, "Your grandmother is sick. Take this cake and this butter to her."

The little girl put on her red hood. She put the cake and the butter into her little basket. Then she went

Little Red Riding Hood came to the wood. She met a wolf.

"Good morning, Little Red Riding Hood," said the wolf.

"Good morning," said the little girl.

"Where are you going, my dear?" asked he.

"I am going to my grandmother's house. She is sick. I have cake and butter for her. It is in this basket."

"I am going there, too. You go that way. I will go this way. Let us see who will get there first," said the wolf.

Little Red Riding Hood picked flowers in the woods. The wolf ran very fast. He came to the grandmother's house. The grandmother saw the wolf. He jumped into her bed. She ran for the huntsmen.

## Lesson II

Little Red Riding Hood came to her grandmother's house. She knocked at the door.

"Who is there?" cried the wolf.

Little Red Riding Hood thought, "Grandmother must have a cold."

"It is Little Red Riding Hood. I have cake and butter for you, grandmother."

"Pull the doorstring and come in!" cried the wolf.

The little girl went in.

She went to the bed.

"Why, grandmother, what big arms you have," she said.

"The better to hug you, my dear."

"And grandmother, what big ears you have!"

"The better to hear you, my dear."

"But grandmother, what big eyes you have!"

"The better to see you, my dear."

"Oh grandmother, what big teeth you have!"

"The better to eat you up!"

Then the wolf jumped from the bed.

He was going to eat Little Red Riding Hood.

Just then the grandmother and the huntsmen came. Bang! The huntsmen killed the wolf.

**METHOD. THOUGHT ANALYSIS.** First, discriminate clearly in your mind between reading and learning to recognize and pronounce words. The latter, necessary as a preliminary to reading, is not reading. It is the thought—the thought, what does it mean—not what are the words or what the inflexions that should be emphasized.

*Teacher:* How many have heard the story of *Little Red Riding Hood*? Here it is told in print, beginning "Once upon a time," for us to read. Look at the very first thing

that is told, and look up when you are ready to tell it. Try to sound out the words, for you know them.

*Pupil:* Once upon a time there was a little girl.

*Teacher:* All sound out the word (write *hood* on board) that tells what her grandmother made for her. Anna tell what the book says about it.

*Pupil:* Her grandmother made a little red hood for her.

*Teacher:* Look to see what her mother said. Then you may be the mother and say it. What is *n-a-m-e*?

*Pupil:* Then her mother said, "Now your name is Little Red Riding Hood."

Observe that the teacher frequently uses the words in the first part of the sentence to be read, in order to give the child, unconsciously, a good start on it. Encourage the child to work out the words for himself, but help him to difficult words. If the child reads the fifth sentence, for instance, in a monotone, do not ask him to emphasize *cake* and *butter*, but ask, "What should she take?" The natural emphasis, based on the thought, will follow.

When familiar with the lesson, the children may dramatize it, choosing parts, reading from the book or saying their parts, and following the text to know what to do and when to do it. The joy this gives, and the rapid advance in ease and expression that results, makes the simple dramatic rendering of each lesson very valuable.

17. **Reviews.** (a) **Two PLANS.** Reviews of single words and phrases should come often, in order to fix their form definitely upon the child's memory and so prevent hesitation and mistakes when the words or phrases are encountered in sentences. Such reviews are most useful drills, but they must be made interesting by means of varying arrangements, changing the questions and plans, letting children take turns in conducting the drills, using script to-day, print tomorrow, both the next day, etc.

Reviews by genuine thought-getting and thought-giving from sentences, which alone is reading, is a very different thing from the mere recitation of words. Back of all



the words in the sentences must be intelligent comprehension of the sentiment therein contained. One great help to this comprehension is continuity; hence, all reading reviews should be in the form of connected sentences forming what may appropriately be called a story, leading to a definite ending or conclusion.

In the first year the review should take one or the other of the following forms:

(1) Reread a story already more or less familiar from previous readings. This form may be used to some extent, but not often, because pupils soon memorize the entire story and read (?) it purely from memory. This "reading" from memory is often done even when the children are utterly unable to recognize the separate words and phrases of their story if the order is changed about.

(2) Give the review always as a new lesson, using no new words or phrases, but arranging those already given so as to form an entirely new story. This is the only form to be depended upon to accomplish the ends sought in a review lesson, viz.: (a) To keep the interest in reading keen and vivid; (b) to drill upon recognition of word and phrase forms; (c) to give additional practice in thought interpretation; (d) to furnish additional reading matter for the class.

(b) AN ILLUSTRATION. Suppose the following stanzas are the lessons that have been read:

Robin come with early spring,  
Dressed up in his very best;  
Very pretty is his suit—  
Brownish coat and reddish vest.

"Cheer up! Cheer up!" Robin sings;  
"Cheer up! Cheer up!" all day long;  
Shine or shower, all the same,  
"Cheer up! Cheer up!" is his song.

The following prose sentences constitute the review: (1) With the early spring, Robin comes. (2) He is dressed up in his very best. (3) His suit is very pretty. (4) It is a reddish vest with a brownish coat. Robin sings "Cheer up!

Cheer up!" All day long, he sings "Cheer up! Cheer up!" It is all the same in the shine or in the shower. His song is "Cheer up! Cheer up!"

Reviews that are entirely suitable for first grade pupils are more easily made than found. They may reproduce the same ideas, as in the above, or the new story may have all familiar words and phrases and yet bear no relation to any story previously given. Both kinds are needed.

(c) ILLUSTRATIVE LESSON. The following lesson reviews the words in the sentences naturally used in the fall, such as *nest, home, birds, woodpecker, tree, high, squirrel*, besides the simple common words and expressions, as "I see," etc.

The thoughts of the lesson are (1) that the tree is the home of the birds and the squirrels, besides furnishing a play place for children (beginning work on forestry); (2) that the birds leave in the fall.

Such a lesson may either be written on the board or on the hektograph. A simple illustration drawn by the teacher would add greatly to its value. Help as needed may be given as the lesson moves on. Children taking the parts may be frequently changed.

*Teacher:* The children in this story are swinging under the old willow in the fall. Jack is swinging May. Look to see what they say. Now, May, you are in the swing. Show us how it goes. What can you see?

*May:* Swing! Swing!

O, I see a nest.

*Jack:* Where? Where?

I can't see the nest.

*May:* Up high in the tree.

*Jack:* O, I see it.

It is high in the tree.

Are there birds in it?

*May:* No, the birds have gone.

*Jack:* Where have they gone?

*Teacher:* Who can tell where the birds have gone?

*Teacher:* Now let's choose another May and Jack. Look

ahead to see what to say and say it just as you think May or Jack would.

*May:* Swing me high, Jack.

*Jack:* Swing! Swing!

*May:* O, I see the squirrel's hole.  
Please swing me higher.

*Jack:* Swing! Swing!

*May:* I can see another hole.

It is the woodpecker's home.

*Jack:* There are many homes in the tree.

**18. The Hektograph.** In the presentation of such reviews, both the blackboard and hektograph may be used. When the blackboard space is very limited a hektograph is almost indispensable, and, accordingly, we present a practical recipe for making one. The cost for material is rarely more than seventy-five cents.

(1) Dissolve four ounces of gelatine in a pint of cold water and then add one pint of glycerine. Put the mixture on the stove in a double boiler, so it will not burn, and when it comes to a boil, pour it into a shallow granite pan, eight by twelve inches in dimensions. Then put the tin in a level place while the mixture cools. If gelatine cannot be obtained, the same quantity of good white glue will answer the purpose, but it will not make quite so good a surface.

If air bubbles form, take a sheet of writing paper and pass the edge slowly over the bubbles. If when cold, the mixture is too hard, melt again and add a very little glycerine; if too soft, add a little more gelatine.

If the surface ever becomes rough or discolored, place the hektograph over a pan of water on the stove and melt it, then set the hektograph away to cool, and it will be as good as ever.

Violet or black hektograph ink can be secured at a drug store, and a small bottle will last for a long time.

Use a coarse stub pen and unglazed paper for your original copy. See that every stroke leaves a metallic luster when

dry. Having made your copy, press it face down on the surface of the hektograph, leave it there one or two minutes, and then gently peel off the paper. You will find your writing transferred to the hektograph, and by pressing clean sheets of paper evenly on the surface you can take off many copies in a short time.

When through using the hektograph, wash it immediately in tepid water, with the hand or a soft sponge. Never leave the surface dirty.

### TEST QUESTIONS

1. What are the ultimate purposes in teaching reading? What do you consider the chief purpose in the primary department? What is the immediate purpose of the earliest lessons?

2. Show that a completely successful method of teaching primary reading should combine two or more methods.

3. Is there any reason why a pupil should know his alphabet in regular order during his first year in school? Is it desirable that a child ever should be taught the a'phabet thoroughly in its regular order? Why?

4. Why are reviews so necessary in reading? For what reasons is it better that a child should have his first lessons from the blackboard rather than from a printed chart or primer?

5. Write in a perfectly plain, large script, with little or no slant, five simple expressions such as might be used in very early lessons in reading. In a parallel column print the same expressions as you would use them in such a blackboard exercise as is described on page 41.

6. Assume a small class of beginners from whom you wish to derive sentences, using an apple as the subject. Write out your part in the second recitation, giving in detail and in logical order the questions you would ask, the comments you would make and expressions which you would place upon the board.

7. Assume that you have again the same class several days later. Rule a half page of your recitation paper to represent the space on a blackboard, and fill this with expressions so arranged as to be used successfully in a drill exercise in review. Tell how you would conduct the drill.

8. Show how methods of teaching reading that are perfectly satisfactory in one school may be quite unsatisfactory in another.

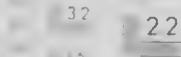
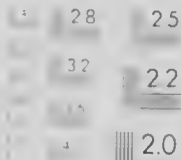
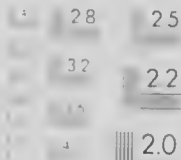
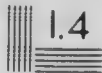
9. Suppose that on the first day at school the children come provided with new and attractive primers or first readers; would you use the books? If so, when and in what way? Have the pupils a right to expect that the books will be used? In whose possession should the books be kept when not in use in recitation? Why?

10. Discuss the teaching of capital letters and punctuation marks during the first year of school.





MICROCOPY RESOLUTION TEST CHART



APPLIED MATERIALS INC.





Illustration by Louyot

YOUNG FOLK AT THE CANAL

## CHAPTER THREE

### SECOND YEAR READING AND PHONICS

#### SECOND YEAR READING

**1. Need of Reviews.** In graded schools, the teacher of the second year reading class, often secretly, and sometimes openly, blames the first year teacher because the children come to her inadequately prepared for their new work. This is particularly liable to be the case when the long summer vacation intervenes between the close of the first year's work and the beginning of the second.

All summer the children have reveled in the freedom of out-of-door life, and school and school books have been put aside and forgotten. As a natural result, it is an effort to recall word forms and all else that was taught in the first year, and to the puzzled teacher the pupils seem to have been promoted without good preparation. In most cases, the new teacher's first judgment is both hasty and erroneous. The routine of school life soon brings back what had been learned before vacation, and after a few days the work goes smoothly on.

The difficulties of the first week could be almost entirely obviated by having the class review the last third of several good first readers. This recalls the half-forgotten vocabulary and lays a foundation for the advance work. Moreover, the power to read fluently from these familiar books gives the pupils a confidence that enables them to do justice both to themselves and to their former teacher. Hence, it is better, for the first week, to limit the reading to the review of primers and first readers. It is also wiser, for the first month of the second year, to use no supplementary reading matter that is more difficult in thought, content, vocabulary and style, than that found in the last third of the best first readers.

These precautions are necessary to prevent discouragement, since second readers are often a long, hard step above

the first readers, and are seldom graded so carefully. "It is the first step that costs" here, as elsewhere. The first month of any grade is a crucial one for the class unless the teacher has the wisdom, tact and skill to foresee and overcome obstacles by a judicious mingling of reviews with new work.

In the best city schools, the class is expected to read through at least three primers or their equivalents, and one or two first readers, before they complete the work of the first year. The first term of the second year the same class reads several first readers through (at least three) before beginning upon the second reader. The motive is to secure (1) *absolute certainty* in vocabulary, (2) intelligent and accurate reading, (3) confidence, (4) fluency.

With such a preparation, the advance work is taken up easily, and interest never flags. There is no room for discouragement, because the steps in the work, from the first, are continuous and even. It is recommended, therefore, that the plan be followed as nearly as possible.

**2. Value of Supplementary Reading Matter.** To carry out the above suggestions fully, requires various sets of primers and first readers as the property of the school, in addition to the ones the pupils own individually. Should these be lacking when the term opens, the teacher needs to use all legitimate means to secure them. These primary readers are the foundation of the library idea in the minds of the youngest pupils. By means of these extra books the taste for reading and the habit of reading may both be fairly commenced.

Until at least one extra set of such books can be secured, the teacher will need to provide the supplementary reading for the class by her own exertions, and largely from books that are her own property.

*Caution.* A teacher should be provided with a copy of every text-book that her pupils use, in order not to borrow from the class. A child feels the annoyance of surrendering his book. It makes him dependent upon his neighbor, and,

as the result, neither child can do so well. When visitors are present, his sense of politeness causes him willingly to yield his book, but his generosity should not be imposed upon daily.

**3. Need of Preparing Reading Lessons.** Not even a primer lesson should be attempted without careful, previous preparation on the part of the teacher. Said the great writer, Harmann, while employed as a teacher, "I should be ashamed to meet my primer pupils without having looked at their lesson myself." Few teachers of that day would have agreed with Harmann. In fact, his remark would have been looked upon, by most people, either as a huge joke or as the utterance of a person lacking in good sense and fit only for ridicule. To-day public opinion is so changed that the best educators fully agree with Harmann. Those who now oppose his view do so through lack of knowledge of what the primary children really need in the way of guidance and encouragement, during their early struggles with the problem of learning to read.

First, look through the lesson rapidly, to discover the thought that the selection expresses. Mentally decide on some further illustration or suggestion to use that will emphasize the thought when the lesson is read. If you trust to the inspiration of the teaching moment, you are likely to be lost.

Then read the lesson through slowly and thoughtfully, noting the difficulties as they appear. Try to take the child's point of view in deciding where the "hard" places are, and the teacher's, in mentally determining what devices to use in order to help the children to help themselves over such places. Decide which new words the children are to be aided to get phonetically, which phrases should be reviewed, what suggestive question is to be asked containing the difficult word, perhaps even which backward children are to be helped, and how. This practice of definite, detailed preparation takes little time, and it is the secret of many an experienced teacher's success in teaching reading.

**4. Conditions Contrasted.** A child enters school the first year full of vague hopes and fears of the unknown, but

the whole situation is so novel that it is full of vivid interest. If he is wisely taught during this year, he comes to the end with interest unabated and with his happy spirit unclouded by the experiences of his first school year. Otherwise, he looks forward to the second year with dread, and his new teacher's task is doubly hard because of this undesirable change in his mental attitude. No real progress can be made without interest; therefore, the second year teacher must use all her energies to hold the interest, in the one case, or to restore it, in the other.

In the first year, the child is given familiar words to recognize at sight. Whether the words are of one syllable or more makes no difference, unless it is in favor of the long word. From the very unusualness of its form, such words as *butterfly*, *sunflower*, *goldenrod* and *beautiful*, if they happen to have been taught, have made a more vivid impression upon the child's mind than the most short words. Moreover, these longer words make a stronger appeal to the imagination. For both of these reasons his memory easily retains them. The one caution in the early part of the first year is to be sure that the meaning and spoken form are familiar. The word forms most difficult for first year pupils to remember are short words that closely resemble one another, such as *was*, *saw*, *these*, *those*, *when*, *where*. This difficulty often goes over into the second year, where new words are rapidly added to the child's vocabulary, many of them new in meaning as well as in form.

The child, in the first year, is kept almost entirely within his own experiences. All the words represent familiar ideas; all the sentences are short. In the second year, new ideas are constantly introduced and the sentences are made longer by the introduction of adjective and adverbial phrases or by the union of two clauses hitherto kept separate. He now reads his lessons by paragraphs through continuous pages. Heretofore, nearly all his reading has been limited to sentences lightly connected and seldom filling more than one page as the maximum of his hardest lesson.

He is now expected to begin and continue the independent pronunciation of new words by means of the more serious lessons given in phonics. He is also to prepare his reading lessons with the minimum of assistance from his teacher. Previously, he has been helped over all, or nearly all, the hard places. Objective illustrations are now largely withdrawn and a long lesson must be interpreted with the aid of a single picture, or none at all, unless the teacher meets the difficult ideas with rapid sketches upon the blackboard to help him understand the text.

These are only a part of the new experiences that confront the second year pupil in reading, alone. They are placed in detail to call the attention of the teacher to the fact that it is no easy problem that faces the child who, last year, was little more than a baby, and who, at the most, is but a little older than when so much less was required.

All these conditions need to be given careful thought. The difficulties must be presented, one by one, the easiest first, and the new steps taken as thoroughly as in the first year.

**5. New Phrases.** New phrases should be taught from the blackboard, that the child may have them to use in oral language work; also, that he may surprise himself by rapid recognition when they first occur in his reading. Recall the ones given in the first year and add others as rapidly as occasion can be made naturally. Among the new ones to teach early in the second year are *to-day, to-morrow, yesterday, as well as, just as well as, long ago, far away, far off, right hand, left hand, near by, never, forever, one by one, two by two, none at all, after a while, perhaps, in a little while, overhead, underfoot, once upon a time, immediately, presently*, and the like.

Train pupils to *think and read* these expressions as *units*, never breaking their meaning by uttering them in single parts, or hesitatingly. This, with persistent effort on the part of the teacher, will after a while settle into a fixed habit and be of lifelong assistance to the child.

As he grows older, the pupil learns to look ahead in his reading, grasping longer groups of words at a glance. This

power is almost invaluable to a person who delights in reading and yet has but limited time for it. We recall a gentleman who excited our youthful admiration by the rapidity and ease with which he mastered the contents of a newspaper, magazine article, or other publication. Ambitious to secure the same ability, we watched him as he read and discovered that he read by lines, the eyes not resting at all upon single words. Moreover, the intelligence literally *flushed* from line to line, gathering the ideas with almost incredible rapidity. In this case, long practice had formed a most valuable habit, the foundation of which is the power to see and *think* groups of words and ideas as *units*.

The power to recognize and comprehend words in groups is attainable by all people of common ability and education, and the earlier the habit is formed the greater its strength and efficiency in mature life. Hence, we urge the practice of teaching first year children to recognize familiar phrases and idiomatic forms and *to treat them as units* in both silent and oral reading. Moreover, we urge the review of all such idioms and word groups at the beginning of the second year, the gradual introduction of new group forms and the continuance of this practice until all the children cease to separate groups into words, except when a new group is presented for the first time.

This custom prepares the way for intelligent study, develops the power of rapid thought and is ultimately a great time-saver. Better than all else, perhaps, it early trains the child to work with sentences for the purpose of finding the thought to be expressed and saves him from the fatal conclusion that mere word pronouncing, phonic drills, and other forms of preparation and drill are genuine reading.

**6. Incentives.** The pupil learns long before he is out of the primary grades that there is something desirable within the lessons given to him for which it is well worth while to work, and that learning to read is the only way by which he can help himself to this desirable thing. That inward craving that leads the little child so persistently to beg older

people to tell or read a story must be turned to account as soon as he reaches the schoolroom. It is easy to keep him interested in the mechanics of reading by means of skill and variety. But his intelligence is not satisfied by the simple sentences he ought to have at first. He needs something of a higher order; therefore, at the opening exercises in the morning or afternoon, or as the last exercise of the day, the teacher should read something in which the child will find real enjoyment. The class will listen with keen appreciation to *The Birds' Christmas Carol*, *The Story of Patsy*, *The Five Little Peppers*, *A Dog of Flanders*, *The Child of Urbino* and many other beautifully written stories of child life, so easy to obtain. From such readings, the children are unconsciously getting a standard of good reading, a taste for beautiful imagery in style and a liking for good authors.

The teacher should not make selections from the reading books the child is to use. That method robs the books of the charm that novelty lends and deprives the teacher of a powerful incentive to hold before the learner. For instance, after some reading that has been particularly enjoyed, the teacher may (and should) use the opportunity to say smilingly, but earnestly, too, "There are many books as good as this that you can read for yourselves as soon as you learn how. And there are charming stories in your own readers that you shall read very soon if you work well."

It is proper, also, to lead pupils to greater effort from the desire to please the teacher, their schoolmates, the superintendent, or other visitors, and the circle of family friends at home. There is nothing to censure in this course, but everything to commend. It fosters the child's natural affection and a certain innate hospitality that leads to a desire to please others, even at the cost of trouble to himself.

**7. How to Use Incentives.** To this end, the teacher may often call upon an individual pupil to come out and stand facing the class and there read a paragraph directly to them, he consciously doing his very best to read intelligently and pleasingly. Little by little, this method may be extended to



include two paragraphs, three, a whole page, and, at last, an entire story or poem.

On Friday afternoons, the entire reading period might take this form, on the strength of its merit, were it not that children are so sensitive to any real or fanciful slight that the most timid child would prefer to make the effort to read before strangers rather than seem to be left out. On such occasions, then, it is wiser to choose some interesting story or poem, quite familiar to the class, and see that each child participates in the oral reading. This may be followed by one child reading the whole of a short lesson alone. It is well to train every member of the class to do this. With this privilege in sight, the slowest or the most careless child will be spurred to do his best for the sake of reading aloud to friends who may be present.

Occasionally, when the superintendent comes in, the teacher may say before the class, "Now, Mr. Brown, you have heard each one read a little part of the story. Would you like to hear one of the class read the whole story?" Probably Mr. Brown will cordially assent and may add, "I'd like to hear it all read by each one of the class, but as there isn't time for that, may I call on a girl to read half of it and a boy to read the other half?" The wise teacher as cordially consents and allows the superintendent to choose the readers. Another time he may ask of the same class, "Who will volunteer to read for me to-day the story on page twenty?" always being sure that he chooses some lesson that the children have had a chance to study and read at least once previously.

For the child that is very slow to grasp new things, one of the best incentives is to be permitted to read before company. In making this a privilege, rather than a forced exercise, is where its chief value as an incentive lies. Each child is led to realize that the reputation of the teacher and the class rests upon his being ready to do such things when asked, ready to reflect credit upon himself and the school.

When there is some lesson with a great deal of beauty or a great deal of fun in it, some child very often naively remarks,

"Mamma would like that," or "I wish papa could hear that!" Then is the golden opportunity for the teacher to say, "Why not take your book home and read it to your father and mother?" At the next session, ask if this was done, what the parents said, etc., not dwelling long upon the matter, yet long enough to show real interest and to strengthen this bond of union between the home and school.

Again, towards the latter part of the second year, the child may be permitted to bring a selection from home to read to the school. This is the hardest test of the year, but greatly enjoyed. We well remember a little girl of the second reader class who read to the pupils all of Clement Moore's immortal *A Visit from St. Nicholas*, and read it most delightfully, too. The entire preparation was made at home with the assistance of her mother. After that, other children were permitted to read similar selections. The example of the first child was an inspiration felt by all the class. This privilege is reserved for the latter part of the second year, because no child can be trusted to read well from an unusual book until he has had sufficient drill upon the mere mechanics of reading to give him a large and well-grounded written vocabulary.

**8. Teaching Children to Study.** The first step towards actual study is the rapid recognition and correct understanding of words, phrases, idioms and short sentences that have previously been given. This has already been sufficiently discussed. The point is to establish firmly the power to distinguish between friends and strangers, *i.e.*, to have the child able to tell instantly the words he does know and to select without any hesitation the ones he does not know.

The second step is to create a desire in the pupil to know the pronunciation and meaning of new words which he meets in his regular reading lessons or elsewhere. The proper incentives to bring about this end have been discussed.

The third step is to make the pupil self-helpful. He now has too much acquired power for the teacher to tell him all

the new words and trust to his memory alone. A common rule of life is that we are apt to value things in proportion to the trouble it costs us to get them. As a general rule, this applies to a child as well as to an adult; hence, the child must learn to find out the new words for himself, that he may appreciate the need of remembering accurately in order not to be obliged to do the work over again.

Adhering too rigidly to the educational maxim, "Never tell a child what he can find out for himself," may, and will, lead to loss of time and result in dangerous discouragement. As well expect him to walk strongly and independently the first time he tries. All new steps need to be taught cautiously and such help rendered as will give the child confidence that he can help himself. When there is no previous experience to use as a basis of work, the teacher must lend help to introduce new ideas clearly enough for the child to assimilate them.

The pupil may be led to acquire new words for himself, partly by joining units already well known and partly by being taught to resolve new words into their phonetic elements, omitting silent letters and sounding the ones used in their oral pronunciation, as indicated by the diacritical marks given in the book or placed by the teacher.

The union of these two methods in the same lesson brings better results than either of them alone. Time is also saved by such a union and a higher degree of interest maintained.

#### SEPTEMBER

The goldenrod is yellow;  
 The corn is turning brown;  
 The trees in apple orchards  
 With fruit are bending down.  
 The gentian's bluest fringes  
 Are curling in the sun;  
 In dusty pods the milkweed  
 Its hidden silk has spun.

**9. Application of Theory to Practice.** (a) PREPARATION. The above poem is given most easily in September. In any

other month the illustrative material is hard to secure. The teacher equips herself with sprays of goldenrod, an ear of corn in its ripened husk, some apples, a blue-fringed gentian and a supply of milkweed pods more or less burst open and showing the sill.

The best way to secure the apparatus is by the cooperation of the boys and girls of the class. Say nothing about the poem beforehand, but ask one child to bring the next day an ear of ripe corn in the husk; another, some sprays of goldenrod; another, apples; another, the milkweed. If the fringed gentian does not grow in the vicinity, the teacher should have a colored picture of it to show the class, or draw one with colored crayons upon the board.

The lesson may be in the reader, or written clearly in large script upon the board, the children grouped so that all may see each word without any difficulty.

(b) PRESENTATION. The lesson may be presented in two ways. First, in the nature study period have all the specimens examined and carefully discussed, using the right names as they occur in the poem. This works out all the underlying ideas in the poem, and the pupil has only the new arrangement to trouble him when he comes to the reading lesson. During the first part of the second year, this mode is the preferable one to follow, the children having become familiar with it in the first year.

The other mode is to say nothing of the specimens until the difficulties of the lesson show the need of illustrations. This method makes a variety, is more of a surprise, and may often be used in the second half of the second year and in all the subsequent years when reading is taught as a separate lesson.

(c) PLAN. "What month is this, class?" "What is the lesson about?" "Look at the first line, children. See if you find any new words." "The second word is new?" "Never saw it before?" "Cover all but the first four letters. What word is left now?" (Class easily pronounces *gold*.) "Look at the next two letters. What are they?" "e-n."

(Teacher writes them on the board.) "Now sound this letter *e*; this one, *n*." "Sound them quickly. What do you get?" (Class pronounces.) (Teacher writes *gold-en*.) "Put these two together. What do you get?" "*Golden*." "How many letters are left in the word?" "What are they?" (Writes *rod*.) "What is this word?" (Adds *rod*, making *goldenrod*.) "Pronounce the whole word." "Correct." "How many ever saw the goldenrod?" "How many can see any now?" "Mary may show us all some goldenrod." "What color is it?" "Yellow." "Find the word *yellow*." "Show it to me." "Harry, read all of the first line." "All look at the next line." "What does this line talk about?" "What does it tell us about the corn?" "Ole, read the whole line." "Show us some corn that is turning brown, Margaret." "Examine the third line." "You don't know the last word, John?" "What is the word just before that one?" (Apple.) "Where do apples grow?" (On trees.) "Read the third line as far as you can." "The trees in apple—." "What do we call a great many apple trees planted together on purpose for raising the fruit?" (If no one in the class tells the word readily, waste no time but tell the word, having the class pronounce it several times, with eyes on the word.) "Lulu, read the third line." "What does it tell?" (The answer may be "Nothing"; but is more apt to be "Don't know," or "Can't tell.") "Well, let that wait a little." "Any new words in the fourth line, Jennie?" "Read it then." "What are bending down?" (Refer to the first line if the child hesitates. If the answer is not readily given, write the sentence "The trees in apple orchards are bending down with fruit." Have it read and then get the third and fourth lines read together as printed.) "How many have seen such trees?" "Whose orchard were they in?" "What made the trees bend down?" "Who will read us the first stanza?"

Bring out the meaning and pronunciation of words in the second stanza in the same way as in the first. No doubt the third and fourth lines will make some trouble until the

"hidden silk" is examined in the dusty pods. *Dusty* and *pods* may both be new to the class. Pronounce these by sound. Teach *gentian* as a sight word. The diacritical marking is not impossible, but is so difficult that time is sure to be wasted upon it. Let the class make out the pronunciation of the word *milkweed*. (Cover the last four letters.) "What word is left?" (Cover the word *milk*.) "What word is left?" "Say the first part." "Now say the second part." "Now say both parts together." "Who has seen milkweed?" (Show it to the class.) "Where does it grow?" (Show the pods.) "What are these called?" "Why are they called dusty?" "What is the hidden silk?" (Show it.) "What is it for?" (To keep the seeds safe and to act as sails in distributing the seeds when ripe.) "Why is this plant called the milkweed?" (Recall the sticky juice of the stem when the plant is growing.)

The teacher drills on the new words as follows: She rapidly presents the goldenrod and other plants named in the poem, calling on the class to show the word that stands for each. Then she reverses the plan, herself pointing to the words and calling on different children to show the plants or parts named.

The outline above given indicates the line of work needed for such a lesson's presentation. The real *reading* is free from word teaching and consists of having the children read the stanzas, one after another, and finally the lesson as a whole, solely for the beauty and the enjoyment of it. Whatever lesson is given, the final reading should include the entire story, in order to leave it with the class as a whole.

*Caution.* In all these lessons, the children must be kept alert, fully attentive, with interest at the white heat, by the teacher working with rapidity and requiring rapid work from the children. The rapid results are gained by rapid questions and rapid movements, no loitering and no loss of time; not by saying, "Hurry children, hurry!" The lessons are too short for this concentration to do harm.

(d) **INDEPENDENT STUDY.** In the second year, the pupils may have twenty-minute periods for reading lessons. These should be made to cover the review of such portions of previous lessons as the present lesson depends upon, the real reading of the lesson previously prepared, and during the last three or four minutes, the assignment and preparation of the next lesson. After the children have had this assistance they are able to work alone, to quite an extent, on the lesson when at their seats.

In the last part of the second year, the lesson may be assigned for the next day, the children preparing it as best they can without help. When they come to the class, the teacher requires each sentence of the first paragraph read silently, children reporting words, if any, which they were not able to make out for themselves or whose meaning they failed to understand. These are quickly disposed of and the oral reading is required, the silent reading always preceding, to prevent mistakes in pronunciation and interpretation.

*Caution.* The silent reading holds the attention to the thought, but no carelessness in word calling should be permitted, even when the thought is made clear by clever substitutions of synonymous words and expressions. Such substitution begets a habit of carelessness that is liable to follow the child all through his lessons. It is far better to go a little more slowly and require words and phrases to be given with the same accuracy as the thought. To be exactly right is far more beneficial and saves much future trouble for the teachers of the higher grades.

**10. Syllabication.** The work in syllabication, if carried on as indicated in the lesson on *September*, will soon give the child the power to see the parts easily, and such words as *sunshine, grandfather, childhood, buttercup, sidewalk, horse-shoe, dandelion, red, east*, will be quickly mastered without aid.

**11. Expression in Reading.** Correct expression in reading is dependent upon the following: (1) ability to pronounce words correctly and to utter phrases smoothly and unhesi-

tatingly; (2) understanding the sentences; (3) full sympathy with what is to be read, *i.e.*, merging one's identity with that of the author; (4) the desire to interest others in what is read; (5) freedom from self-consciousness; (6) natural tones.

Whenever and wherever these conditions are fully established there will be expressive reading. Children should not be constantly urged to "emphasize the word *bird*," to "stop at the period," to "give the rising inflection," or to do anything of the kind. The results can be secured by proper questioning as to the meaning, getting the child fully interested and then remarking, "Now read it so we shall all understand it as you do." If there is still a stilted or unnatural style of reading, ask the child to look at you and tell the sentence until he brings out the meaning clearly and with naturalness of tone and manner. Then return to the original request and have the sentence read as spoken.

The best models of expression may be secured from the children themselves when at play and unconscious of being noticed. It is sometimes well to note some of the sentences and use them, later, at a drill period, to secure certain tones and inflections.

*Cautions.* (1) Leave all terms relating to the science of reading, as emphasis, inflections, modulations, pitch, etc., for later years. The aim in the primary grades is to secure naturalness and fluency in the art of reading simple matter suited to the comprehension of the children, and can best be realized by omitting all technical terms.

(2) Do not attempt to secure correct expression by requiring pupils to imitate you or their classmates. That makes children dependent instead of self-reliant, and turns them into parrots instead of thinkers. Secure the right feeling and sentiment and "good expression need not be referred to; it will take care of itself."

(3) Make criticisms in such a friendly, matter-of-course way as to render it impossible for the pupils to feel hurt thereby.



**12. Rules for Criticism.** The general rule should be never to interrupt a pupil's reading for the purpose of making corrections. With children in primary grades, however, this rule must often be violated or else much valuable time will be lost. To illustrate, suppose the child has a paragraph of several sentences to read and in the first part of the first sentence miscalls a word. The teacher waits until the entire paragraph is read and then asks, "What did you call the second word in the first sentence?" The reader has entirely forgotten that and the other errors made. Hence, in our judgment, in such a case, it is wiser to interrupt when the error is made, saying pleasantly, "Wait a moment, please. What did you call that second word?" Have the error corrected without any ado and then say, "Now we know the word. Please begin once more." By this means the child is more apt to remember the help given, because it is given at the moment it is needed, and is able to go on smoothly, without experiencing any embarrassment from the interruption.

Older pupils are able to apply the correction to the right place, and from rapid growth are apt to be more nervous and self-conscious than are primary pupils who have been treated courteously ever since entering school. For these reasons, with pupils above the primary grades, it is best to permit the paragraph to be finished without any interruption for corrections.

**13. Corrections by Pupils.** Having pupils correct errors made by others of the class often results in such angry feeling that many superintendents instruct their teachers never to permit this. In our judgment, there is nothing wrong in the practice in itself. When trouble arises, it is wholly due to mismanagement. Children are allowed to snap fingers or wave hands frantically in the air to attract the attention of the teacher, and to shout, "She called *of for*," or something like that. Such demonstrations and corrections, made in offensively triumphant tones, always arouse anger and should not be tolerated. Besides, because of the utter lack

of refinement and sympathy, it harms the would-be critic more than the one criticised.

There is a better way to do these things. The teacher should educate the pupils in the spirit of helpfulness in the first year and continue it all the way along the grades. Thus, "Mary was out of school yesterday and may not know all the words we had; so I want you to listen very carefully and be ready to help her if she needs it." When Mary hesitates upon a word, hands are raised quietly, and the teacher simply says, "Frank may help." Frank gives the word, Mary pronounces it after him, and the work goes on quietly and pleasantly.

*To be ready to help* is the great motive kept before the class constantly, to hold their attention closely to the one reading and to keep them ready to continue the reading, when called upon, without the loss of an instant of time.

Observe another point: Children should be trained to understand that criticism is not limited to finding mistakes in the calling of words, but that the greater criticism is in telling if the thought and feeling are properly brought out. We remember a blackboard lesson with first year pupils. One of the sentences was a little more intricate in its meaning than anything the class had had. There was no difficulty with words, however, and Jack read the sentence clearly and confidently. "How many liked Jack's reading?" asked the teacher, and all hands were raised except that of thoughtful, sensitive little Charlie. "Didn't you like it, Charlie?" asked the teacher. Charlie flushed from feeling that he stood alone against all the others, but said bravely, "Not quite, Miss White." "Why not?" "Well," the little fellow stammered, "I liked the way Jack read, only he made it mean *this*," and he read it Jack's way. "And what do you think it means, Charlie?" encouragingly queried Miss White. Whereupon Charlie replied, "I think it means *this*," and read it to bring out the meaning as he understood it. His alone was the true interpretation, although the other nine of the group had not perceived it.

These children were but six years old, and this is a true incident, given merely to show that the higher forms of criticism are possible to young children. We do not claim that all children could be made like Charlie. For all do not have his fine appreciation of shades of meaning. But we do claim that much can be done for primary grades and that children may be trained to criticize one another's work without a particle of ill feeling.

**14. Directions to Give Pupils.** (1) Stand erect, with shoulders thrown back, when you are to read aloud.

(2) Hold your book in the left hand, as far from the eyes as you can see easily, and low enough not to hide the mouth.

(3) Be sure that you can pronounce all the words, and know the meanings of the sentences before you try to read to others. Be sure, too, that you have a full breath before you try to read.

(4) Read loudly enough to be heard easily by all those who are listening to you.

(5) Read slowly enough so that each word may be heard distinctly.

(6) Your reading is good when every one, without looking on the book, understands and enjoys what you read.

The above rules are simple enough for the youngest readers to understand and follow. They are to be taught by the teacher's example and by enforcing them fully at each lesson, until to follow them becomes "second nature."

Violations of these rules may and should be corrected, and obedience to them may be given as reasons why a pupil's reading may be called "good."

**15. Punctuation and Reading.** As in the first year, teachers should carefully refrain from giving the idea that punctuation controls needed pauses. On the contrary, that pauses depend solely upon the meaning of what is read should be emphasized. The use of the period and question mark should be reviewed and the use of quotation marks taught as an incident to the reading drill.

(a) ILLUSTRATION. "Cheep! Cheep!" said the little birds in the nest. "We are hungry, hungry." "Sweet! Sweet!" called the mother bird from a leafy branch near by. "Be good, my dears. Be good. Mother will soon bring you a worm." Then the little birds in the nest again said, "Cheep! Cheep!" But this time their "Cheep! Cheep!" meant, "We will be good, mother, dear. Hurry back with the worm!"

After the new words have been disposed of in the preparation of the lesson, the teacher calls the attention of the class to the first paragraph. "Who were talking?" "The little birds in the nest." "What did they say at first?" "Cheep! Cheep!" "What did they say next?" "We are hungry, hungry." "How many noticed these marks?" (pointing to the first quotation marks). "What words are inside of these?" "Cheep! Cheep!" "See if you can find other marks like these in the first paragraph." "What words do the others enclose?" "Who said those words?" "Were the birds talking all the time?" (Get the fact that some one is telling a story about the birds and at times says just what the birds say.) Question similarly on the other sentences, bringing out each time that these marks show every time they are used *exactly* what the birds say. The teacher gives the name *quotation marks*, having the class repeat. She writes the new name on the board in connection with the quotation marks, and leaves it there for a day or two to help the class remember the name.

(b) DRILL. "Harry, read what the little birds say first." "What shows you just how much to read?" "What is the next thing the little birds say?" "How do you know just how much they said, Emily?" "Find the next quotation marks." "Who talks this time, Susie?" "Tell what the mother bird says here" (pointing). "Look through the paragraph and find what else the mother bird says." "Read all she says in this place." "Show the quotation marks, John." (Follow a similar plan with the third quotation, leading the class to understand that the quotation marks each time show us just how much the birds said.)

**16. Rules for Capitals.** Constantly review the rules given in the first year, viz.: All sentences and names of people and places begin with capitals. Add to these the rules: Each line of poetry, the names of the days of the week and the names of the months begin with capitals; but the names of the seasons do not. Teach each item thoroughly.

Teach the above rules, informally, in connection with the reading drills, using a plan similar to that suggested for the first year. Introduce but one difficulty at a time. Call attention to the capitals when writing sentences, also when the class use their books. Any second year class can accomplish with ease all the work indicated, if the teacher helps a little daily. Many classes are able to do much more. Better teach thoroughly the most important rules than to attempt the more intricate.

**17. Poetry.** In the second year, the children should have poems as a third part of their reading. Owing to the greater vocabulary, they will now be able to read something much better than Mother Goose jingles and rhymes. If their readers do not supply enough selections, the teacher should copy desirable poems and let the class read from the black-board or leaflets. The craving for rhythm is so strong in a child that to withhold good poetry from the primary grades is a serious thing. In addition to the rhythm, the child gains from poetry a large and valuable addition to his vocabulary and many helpful lessons in conduct, besides.

**18. Poems Suitable for Second Year.** In these days we may almost say, "Their name is legion," when speaking of really good poems for children of this grade; hence we shall name as types but a few of the many. Tennyson's *Cradle Song*; Celia Thaxter's *Spring*; Mrs. Coonley-Ward's *Christmas Bells*; Elizabeth Prentiss's *Little Kitty*; *Sleep, Baby, Sleep* (from the German); Mrs. Child's *Who Stole the Bird's Nest?* Helen Hunt Jackson's *September*; Edith M. Thomas's *Talking in Their Sleep*; Mrs. Miller's *Hang Up the Baby's Stocking*; Maud Wyman's *If I Knew*; Eugene Field's *Little Boy Blue*; Lord Houghton's *Lady Moon*; Lucy Larcom's *Little Broken*

*Thrush*; Lucy Wheelock's *Song of the Lilies*; Frank Dempster Sherman's *Daisies*; Helena Jelliffe's *Clovers*; George Cooper's *Frogs at School*; George MacDonald's *The Baby*; Stevenson's *The Swing*; Jean Ingelow's *Seven Times One*, and Phoebe Cary's *Suppose, My Little Lady*.

Some of the above are more simple than others and such should be used in the early part of the year. However, all in this list, and many other beautiful and appropriate poems, may easily be read from the blackboard or hektograph leaves before the class begins the third reader.

**19. Sources from Which to Draw.** Among the best graded collections of timely poems for children are *Songs of the Tree-top and Meadow*, Public School Publishing Company, Bloomington, Ill.; *Graded Memory Selections*, Educational Publishing Company; and *Nature in Verse*, Silver Burdett & G.

In addition to the above collections, teachers will find published in our leading educational papers a great many beautiful poems adapted to the primary grades. Then, too, many valuable gems of verse are published in the best family papers and in children's magazines.

**20. Supplementary Reading.**

Such pleasing poems will add a most desirable portion of the supplementary reading needed in the second grade. During the first term, to bridge the chasm between the usual first and second readers, use the last third of several good first readers. If it proves impossible at first to get enough of these to supply the class, then the teacher should, by aid of the hektograph, prepare enough leaflets to supply each



ILLUSTRATION BY THIRD GRADE PUPIL THE LION STEPPING ON THE MOUSE.

member of the class with one. She may also copy stories from children's magazines in the same way. Excellent selections are often to be found in *Our Dumb Animals* and in publications of the Audubon Society, and even at times in the family newspaper.

Supplementary reading, such as *The Lion and the Mouse*, composed and illustrated by a third grade class for a second grade class, is a great aid in introducing matters considered important by the teacher, but not contained in the regular reading lesson — as opportunities for dramatization, for nature study, or for celebration of the holidays.

#### THE LION AND THE MOUSE

*Players.* Lion and mouse.  
*Scene.* In the woods.  
*Action.* The lion sleeps.  
 The mouse plays around. She goes under the lion's paw.  
 The lion wakes.

#### Scene I

*Lion.* G-r-r-r!  
 Who is under my paw?  
*Mouse* (in a squeaky voice).  
 It is I, Mr. Lion.  
*Lion* (in a roaring voice).  
 Oh, it is you, little mouse!  
 I shall eat you up. G-r-r-r!  
*Mouse.* Oh, please don't eat me up!  
 I would not be a mouthful for you.  
*Lion.* Ha! Ha! That is true.  
 You may go.  
*Mouse.* Thank you! Thank you!  
 I will help you, some time.  
*Lion.* Ha! Ha! Ha! You help me?  
 Ha! Ha! Ha!

Scene II

*Scene.* In the woods. The lion caught in a net.  
*Action.* He roars! He tries to tear the net. He cannot.  
The mouse hears him.  
*Mouse.* Kind lion, you helped me once. I will help  
you now.  
I will gnaw your net.



ILLUSTRATION BY THIRD GRADE PUPIL: THE LION IN THE NET

*Action.* The mouse gnaws and gnaws and gnaws.  
The lion's net drops.  
He bounds away.  
*Lion.* You have helped me, little friend. I thank you.

**21. Myths, Fables and Legends.** Should it happen that the second readers used by the school are deficient in the permanent literature found in the forms of fable and myth, then selections may be presented in the same way as poems.

Among the fables and myths suitable for this grade are *The Tortoise and the Hare*, *The Wind and the Sun*, *The Crow and the Pitcher*, *Belling the Cat*, *The Kid and the Wolf*, *The Sunflower Myth* (Clytic), *Legend of the Bluebird*, *Legend of the Aster*.



Good collections of fables, myths, legends and fairy tales should be in every school, to develop the imagination and preserve the love of reading. Your superintendent or inspector should be able to suggest the titles of such collections. Most of these collections are inexpensive.

**22. Amount of Reading Required.** The general rule is to have second year pupils review the latter part of several good first readers and complete the reading of at least three good second readers or their equivalents. The safe rule upon which to base promotions is to be sure that the pupils are able to read easily, intelligently and fluently all the stories and poems found in their second readers, and also corresponding material drawn from other sources and presented on the blackboard or as hektograph leaflets. Then they may pass easily to the third reader.

**23. How to Use the Readers.** They who make a series of school readers take incredible pains to grade the vocabulary as carefully as may be, in order that the pupil may find it an easy and happy experience to read the series from the beginning to the end. Some authors succeed remarkably well in this grading, others but indifferently. Authors offer also a brief, concisely written preface to help teachers use their books with success for themselves and their pupils. And to what end? As a matter of fact, many teachers never read the prefaces, and ignore all the authors' attempts to ease the burden of the class through careful grading. Instead, lessons are selected "to suit the season," "to please the children," "to help the nature study lessons," and for many other purposes. Being read out of the expected order, the chain of preparation is broken and the class is beset by a hundred difficulties that might have been prevented had the prefaces been carefully studied and the lessons presented in the sequence planned.

The true way, we believe, is to profit as much as possible by the helps that the authors have painstakingly provided. Suppose the class reads the Christmas story before Christmas arrives; what matter? Any selection worthy to have a place

in a reading book should be worth reading more than once. And the charm of a good Christmas story grows with repetition. The truth is, many teachers seem almost to fear to give a story or a poem for a second reading, forgetting that to children the familiar stories are the dearest stories.

PHONICS FOR FIRST TWO GRADES

**24. A Separate Study.** Keep the reading period for the undisturbed pleasure of genuine reading. The work in phonics should be kept apart from the reading lesson proper, especially during the first year in school. Gradually, through the training in phonics, the pupils gain ability to make out words for themselves, largely by trying the drill words and phonograms (written or printed representations of sounds) on the new words they meet in silent reading.

**25. Training Ear and Tongue.** (a) TRAINING THE EAR. Use the *Sharp Ears* game ("spelling by sound," for pupils to recognize and pronounce words). This is *ear training*. (See *Suggestive Lesson One*, Section 30.) The teacher spells by sound the following:

(1) Phonetic names of familiar objects in plain sight in the room, which children may point to or touch; as, chalk, desk, wall.

(2) Phonetic names of actions which children may perform; as, clap, stand, sit, bow, run.

(3) Phonetic names of parts of the body, which children may readily touch; as, lip, teeth, cheek, knee, toe, etc.

(4) Phonetic names of pieces of wearing apparel; as, cap, hat, shoe, dress, waist.

(5) Phonetic names of colors; as, red, green.

(6) Phonetic names of substances; as, glass, tin.

All of the foregoing should be in sight; now give exercises on things out of sight.

The *Wonder Box* is played by giving phonetic names of objects (toys) which are concealed in a box. The teacher spells by sound the name of one. A child, recognizing the name, whispers it to the teacher, and is then permitted to

take the object from the box and show it to the class. In the box may be placed a doll, ball, knife, top, a pin, a nail, a cone, and such toys as a sheep, a duck, a tree, etc.

(8) Phonetic names of any animals or objects may be used; as, pig, cow, rose, stone, cup.

(9) Give phonetically the initial letters of the children's Christian names, and when a child hears "his sound" let him rise at his desk or come to the teacher. Thus, Alice's sound is *a*; Bertha's, *b*; Cora's, *c*. When several children have the same sound, as Della, Dan, Donald, all stand when the sound *d* is given. As soon as children recognize each other's "initial sounds," the teacher may use this device: "Who can bow to some child whose sound is *c*?" Then a volunteer is named and he bows to Edward, or Emma.

(10) Short, imperative sentences may be given; as, *Touch your book*. In such sentences the child performs the action, then repeats the sentence. This differs from (2) only in degree. It is harder to hold in mind several words than only one.

(b) TRAINING THE TONGUE. To train the tongue, have the children spell by sound part of the words in (a). The words should be spelled with the teacher and without her, in concert, and individually. Encourage children to attempt words for themselves; to call each other by initial sounds; to give names of objects by sound. To do things is easier and more interesting than to spell words by sound, so training the tongue is harder and not so enjoyable as the various applications of training the ear. Hence, exercises in training the tongue should be given less time than exercises in training the ear, and these exercises should be handled very tactfully. They should be presented in the light of pleasant recreations.

**26. Associating Sound and Symbol.** This exercise should be in with in a few days after introducing the work in Section 25, and may begin on the same day. It should be presented without delay, because phonics should be used early and often, so that the habit of spelling new words by sound becomes involuntary.





RECOGNITION OF SOUNDS

(a) RESEMBLANCES. In order the more readily to associate sounds with letters, make liberal use of fancied resemblances. These resemblances may be adroitly introduced through a story, in which the dog growls (*r*); the cat says *f*; the cow, *m*; and *sh* says "be still"; *ch* is a sneeze; and *wh* blows out a candle. (See *Suggestive Lesson Two*, Section 31.)

Vowels are introduced very interestingly through the children's initial sounds, and the sounds blended into words which the children more readily recognize because of the practice in the *Sharp Ears* game. Indeed, the *Sharp Ears* game is then applied to written as well as to oral words. The use of fancied resemblances is merely temporary aid; it is a helpful finger stretched out to the toddler who is taking his first unsteady steps; it will soon be withdrawn and forgotten. (See *Suggestive Lesson Three*, Section 32.)

The following is a list of representative sounds:

<i>ch</i> — engine sound	<i>c</i> — cow
<i>ng</i> — bell	<i>n</i> — pig grunt
<i>l</i> — wires	<i>s</i> — snake hisses
<i>p</i> — steamboat	<i>h</i> — goose
<i>h</i> — breath	<i>a</i> — lamb (baa)
<i>t</i> — clock	<i>f</i> — frog
<i>sh</i> — sottly (duh)	<i>r</i> — growling dog
<i>a</i> — dove	<i>z</i> — bee hum
<i>e</i> — mouse	<i>b</i> — bubbles of water
<i>w</i> — beetle (flying)	<i>c</i> — hard <i>c</i> cough
<i>j</i> — angry kitten	<i>w</i> — wind blowing
<i>m</i> — hungry kitten	<i>wh</i> — blowing out the light

(b) INITIAL VOWELS. Make good use of the children's initials. Continue the work under (a) by writing the letter on the board for the child to recognize by sight as well as by sound. Write *A* on the board and let Alice rise and "sound" her letter; or, let some other child who knows to whom that letter "belongs" bow to Alice, and then sound the letter. Thus the children try to learn each other's letters.

Let Roy, Allen and Tom stand before the class; then touch each child lightly, sounding his letter and blending

the three into *r-a-t*; then write the word on the board. Write the combination of Allen's and Tom's letters (*at*) five times on the board; leave the first for the family name, then change the other four by prefixing initial letters. Roy's letter makes *rat*; Sam's letter, *sat*; Fannie's, *fat*; Fannie's and Lora's together, *flat*.

Use the small letter when writing the initial sound, because you wish to combine the letters into words.

When the children are familiar with the letters, drop all reference to initials; this device has served its purpose.

(c) **FIRST USE OF PHONICS IN READING.** From any page in the primer choose a phonetic word, as *doll*, *drum*, *nut*. Write or print it on the board, let the children spell it by sound, and pronounce it. Then show them the page upon which the word is to be found and let them hunt for the word, which is playing hide-and-go-seek with them. They use both eye and ear in discovering it, and are taking the first step in using phonics when preparing a reading lesson.

**27. Diacritic Marks.** Introduce diacritic marks during the first year, and use them frequently enough for the children to grasp their purpose, but depend on them very little for pronouncing words. Diacritic marks for equivalents may be wholly omitted in the first and second years, and used very little in the third. The results obtained are not worth the effort which must be spent in obtaining them. For instance, in the word *move*, to remember that the two dots shows that the *e* is to be pronounced like the double *o* in *moon*, is far harder for the child than to remember *move* as a *sight word*. A child well trained in phonics, meeting the word *move* by itself, would pronounce it to rhyme with *store*; if he met it in a sentence, he would at first pronounce it in the same way, then change to the correct pronunciation as soon as he gathered its meaning from the context.

The principal use of diacritic marks is confined to the dictionary. Many dictionaries respell most of the hard words; all dictionaries are virtually compelled to respell some words, for example, the word *one* cannot be so marked as to indicate

its pronunciation. Besides, dictionaries published by different companies use different sets of diacritic marks, so the child when older may have to use other marks than those first given.

Instead of depending to a great extent upon diacritic marks, depend upon gathering words into families, the compound phonogram being the family name. Thus, in *bright*, instead of marking *i* and crossing out *gh*, teach the phonogram *ikt* as a whole, a family name. The child learns it as he learns *wh*, *th*, etc., as wholes, and prefixes other sound. When the first word belonging to some family is learned, immediately call other members; for instance, if *love* appears in a lesson, group with it *dove*, *shove* and *glove*. When *store*, *grove* and *more* are introduced, we pronounce them and find that though they look alike, they are not in the same "sound family." The meaning tells the child the pronunciation, and the context gives the meaning.

Besides teaching phonograms, or family names, point out by example certain general rules for pronunciation. For instance, introduce the macron, and tell the children that when a vowel wears a flat cap, it says its own name, or has its long sound. Tell them, also, that when no macron is used, there are other ways to show what the vowel says. An *e* at the end of a short word is such a sign; the final *e* is a friend that helps the other vowel to give its long sound. In *made* we know that *a* says *a*, because the *e* is there to help; in *mad* we know *a* says *a*, because it has no helper; so, in *pine*, *pin*; *note*, *net*; *cube*, *cub*, the rule holds.

Then, too, some other letters help just as final *e* does, only instead of standing at the end of the word, they stand beside the vowel which they help. In *rain*, we know what *a* says because *i* stands beside it.

After plenty of practice the teacher may make groups like these:

Long a    a . . . e, ai, ay.

"        e, ea.

"        i, i . . . e.

Long o    o . . . e, oa.

"        u, u . . . e.



Under no circumstances should this exercise be used to introduce the work. It is a summing up which may or may not be put before the children. The rule for *ay* may be presented like this: Suppose that the word *play* comes in the regular lesson; write it on the board and have the children pronounce it (or the teacher may pronounce it for them); then cover the *pl* and pronounce *ay*. Write a column of *ay*'s, underscore the top one for the family name, then call the "children." The teacher writes the "ay" child's name, and the pupils pronounce it; as, *ay*, *pl-ay*, *p-ay*, *d-ay*, etc. When a number of "children" are gathered together, the pupils may send them out to play after this fashion: The teacher asks, "Who can send a child out to play?" A volunteer comes forward and with the pointer indicates a word he knows, as *day*, pronounces and erases it. This game goes on till all of the "children" are gone. The teacher points to the underscored *ay* and asks, "What sound shall we think of when we see this?" The pupils answer, *a* (the sound).

Instead of diacritic marks for *a*, *e*, *i*, *o* and *u*, when they precede *r*, as in *arm*, *her*, *irk*, *orb* and *urn*, teach *ar*, *or*, *er*, *ir* and *ur*, as phonograms, pronouncing the last three alike. That plan changes an army of hard words into easy ones.

Have the pupils write many words which the teacher dictates phonetically, letter by letter; the children pronounce them when the dictation is finished. Do not dictate words containing silent letters, except those which fall under certain rules, with which the children are familiar. The teacher may say, "The next word has *e* for a helper," then dictates, *l-a-n*; the pupils add the *e* and have *lane*. Or she may say, "In this word *i* helps *a*, *r-ai-n*," the children know where the *i* comes when it helps *a*. Usually it is better to dictate by families, giving the family name or phonogram, as *ight*; then the pupils know that each succeeding word has *ight* in it; as, *l-ight*, *s-ight*, *sl-ight*.

The next step, which is an easy one, is for the teacher to give the phonogram as *ack*, then pronounce *pack*, *lack*, as when spelling by letter, the pupils silently thinking the

sounds and writing the words. Children thus trained can master new reading lessons with surprising ease.

**28. Syllabication.** This is not really phonics, but the following exercise may be given in the period for phonics, because it is a means of mastering words.

Write two columns of words:

(1)	(2)	(3)
rag	bag	ragbag
sun	man	ragman
moon	shure	sunshine
	fi h	sunfish
	clay	Sunday
	rise	moonrise
	beam	moonbeam

Then assist the children to make a third column by putting these two together, as in (3), above.

Next write a column of words, such as the following:

(1)  
sunlight  
playmate  
sidewalk

Then make two more columns, (2) and (3), by separating these:

(2)	(3)
sun	light
play	mate
side	walk

**29. Summary.** All of this may seem a great deal of work for the first year; but let it be remembered that in many cities and large towns from six to ten primers or first readers are read through. In accomplishing this, the pupils need to use all that has been suggested, and woe betide if they learn to do without phonics! They never learn to depend upon its help so confidently nor use it so skilfully. Teachers who receive into the second or third grade pupils who have had no phonics know how hard it is to teach them to use it. Additional exercises in phonics see page 115.

**30. Suggestive Lesson One.** The following may be used as the first lesson in phonics, and may be called the *Sharp Ears* game.

*Teacher.* Now we are ready for the game! I want to see who has sharp ears, so I shall say a word very s-l-o-w-l-y, and then someone may tell me what I said. I am thinking about something in this room; I hope some one will touch it. Who can touch some *ch-a-k*? (Repeat the word several times, blending more and more, till at last the slowest child can hardly miss it.) May and Dan and John may go quickly and touch *ch-a-k*! Tell what it is!

The children run lightly and hold up pieces of chalk. In the same way bring out the words, *wall*, *book*, *door*. This concentrates the attention of all upon one object, but only a few have had the pleasure of doing something, so add this:

*Teacher.* Everybody can touch this if their ears are only sharp enough to hear what it is! When I say "Ready! Touch your *l-i-p*!" "Ready!" (Some promptly lay a finger on the lip, others imitate.)

*Teacher.* Now touch your *t-o*.

Then, after all have done it, comes the question: "Who can *do this*? *Cl-a-p*."

"Tommy may do it; Jessie; Ruth. Now all *cl-a-p*!"

"Who can *sk-i-p*? This whole row may try. Stand! Ready! *sk-i-p*!"

The teacher must decide whether the children are too timid to clap, skip, etc.; also whether it is better at this time to have the pupils repeat the words slowly, or to wait a day or two.

**31. Suggestive Lesson Two.** This lesson may be used in associating sounds and symbols.

*Teacher.* There is a little boy named Billy, and he lives in the country and has lots of pets. His cousin Belle came from the city to visit him. When he went after the cow, he took Belle, and Carlo, the dog, went too. The cow was waiting at the pasture gate, and when she saw Billy she said, *m-m-m* (give the sound). Let me hear you say *m-m-m*. I

will write something on the blackboard to help you remember it; when you see this *m*, remember what the cow said.

On the way home, Carlo began to bark, and bark, at something! When Billy and Belle came closer, they saw it was a black snake, coiled up, and it said *s-s-s*. "Come away, Carlo!" cried Billy, "papa says that kind of a snake does not hurt anybody!" So Carlo left the snake and ran on with Billy and Belle. This *s* will make you think of what the snake said. All say it: *s-s-s!*"

While the children were gone, Billy's mother put some bread and bones on Carlo's tin plate. The cat saw it and thought it was good. So when Billy and Belle and Carlo came, there was the cat eating Carlo's supper. My! Carlo ran to that plate, and he growled, "*r-r*," as if to say: "What are you eating my supper for?" The cat sprang away, arched her back and said, "*F-j-j*," as if to answer, "There was such a big plateful that you might give me a little."<sup>1</sup>

(The teacher writes *r*, *j*, *m* and *s*. This may be divided into two or three lessons, if preferred. The lesson is much more effective if pictures of the cow, dog, cat, etc., each saying its own letter, are shown. *New Education Readers*, Book I, has a series of such pictures. The series is published by the American Book Company.

**32. Suggestive Lesson Three.** This lesson is not the third in sequence; it may come a week after the second lesson. It should be used in introducing the vowel and family names.

The vowel used may be a child's initial, as *A* for *Alice*. *A* stands by *m*, and we have *am*, then *r-am*, *S-am*. Or, without any reference to the Billy and Belle story, the teacher may write *i* on the blackboard and say, "Let's call this a little boy, throwing a ball in the air. Can you make his picture as I have? Let's play this little boy says *i* (give short sound of *i*). Here is another picture, *t*. We will call this a tall soldier with his gun on his shoulder. He says *t* (give sound of *t*). Now the little boy and soldier take hold

<sup>1</sup> The story of Billy and Belle is modeled after the *Frank and Fannie* story in Book I of *New Education* series.

of hands like this, *it*. I wonder what they say together? Listen! *i-t, it*. All write it. I will write it—*it, it, it, it*—four times. Now I will put *m* here, then *s*, and *j* by the others, and now we have, *it, m-it, s-it, j-it*.

From that day forth, do not let a day pass without blending some familiar sounds into a written word. The story of Billy and Belle may run on till it brings in most of the alphabet and some special sounds; for instance, Billy and Belle met a flock of geese, and one stretched its long neck, put out its tongue and said, "th-th" at Belle. (This is the sound of *th* heard in *thin*.)

However, by the time a dozen or more letters are learned through the stories, or initials, the pupils will have grasped the idea and can take and retain many sounds without the aid of a story. Just tell them what *oo* says, and weave it into words like *shoot, moon*, etc., and they will remember it.

The Aline Chart gives pages of families of words.

**33. Conclusion.** Everything is begun during the first year. More and harder combinations are presented in second and third years, and the children are required to pronounce the new words which are phonetic in their reading lessons.

### TEST QUESTIONS

1. In what respects would the attitude of the children toward their lessons at the beginning of their second year of school differ from their attitude at the close of the first year? Have you a right to expect a rapid return to the conditions that existed at the end of the first year?

2. Contrast the purpose of second year reading with that of first year reading. Show how this difference in purpose affects the character of recitations.

3. To how great an extent should a child be able to read independently at the end of his second year? Can you reasonably expect that during the latter part of the second year a child will make any independent preparation for his lessons?

4. Quote a brief poem, not found in this lesson, which you consider suitable for second year work. What are the characteristics of poetry that make it particularly pleasing to children?
5. Write a well-known fable in the style in which you would tell it to pupils near the close of their second year. Explain your method of presenting the fable and tell what you would have the class do with it.
6. Mention several means by which good expression in reading may be aided. What is gained by having the children dramatize simple selections?
7. Explain how an understanding of syllabication is an aid to reading for second year pupils.
- 8 and 9. Select a simple poem of not more than two stanzas, and write out your plan of presentation, after the manner of that in Section 9.
10. Why should phonics be introduced in the first grade? How do phonics assist in syllabication?

## CHAPTER FOUR

### THIRD YEAR READING

**1. The Situation.** By the end of the third year, the child should have mastered the fundamental principles of reading and be able to help himself, to a large degree. In other words, when the third year is completed, he should be fairly well through the "learning to read" period and prepared to enter upon the enjoyments of reading to learn. The teacher should not infer from this statement that at the end of the third year the child will need little or no further assistance. On the contrary, if he is to become a good reader, he will need a great deal of assistance during the next two years. But when he enters upon the work of the fourth grade, the problem changes. The teacher of the third grade should see that her pupils are prepared to meet these changed conditions, so that they may enter upon the fourth year's work without loss of time.

To be able to read intelligently presupposes on the part of the learner a large amount of varied detail work, genuine application and industry, unabated interest and a thirst for knowledge that calls forth his best efforts during the entire year. He brings to this work stronger powers of observation, better trained than at the beginning of the previous year; an extensive and well established vocabulary; ability to read second reader matter intelligently; considerable facility in the use of phonics and syllabication; a knowledge of school routine, and some degree of ability to study a reading lesson independent of help. These powers have come as the fruit of his first two years in school. What has previously been gained should be held, all desirable traits strengthened, and steady progress secured.

The long vacation has to some extent dulled the child's memory of book lessons, but the effect will not be so marked as at the beginning of the second year. His books have not

been entirely set aside, as before, and both his bodily and mental powers have gained strength during the summer. In fact, the outlook is very hopeful for this year.

An inexperienced teacher of reading cannot realize how much the success of good oral reading depends upon careful attention to the seemingly trivial matters enumerated below. It is, however, due to the neglect of these points and others closely allied to them we have even among adults so few who are really good.

**2. Order of Procedure.** (a) CONTINUATION OF PREVIOUS WORK. In teaching, all the previous steps must be retained, but in different proportions. The word method is now used when new words are not easily reached by phonics. In such cases, after giving the meaning, these words should be taught as wholes, as "sight" words, omitting phonetic analysis. This need, however, grows less and less as the year advances.

The method of syllabication is used whenever possible, applying phonics to the parts of words in cases of hesitation caused by uncertainty in regard to the correct pronunciation of any syllable. See *Phonics*, pages 83-92.

(b) USE OF THE SENTENCE. All reading lessons in this year deal with connected sentences, paragraphs, stanzas, and entire stories or poems. Thus, the sentiment of a selection is constantly searched for, the new words being taught as incidents needed to reach the meaning of the whole sentence, rather than as single words. The word of itself is no longer an end, but a means towards an end, the end being the thought and its expression. Not only is this true of the single word; it is also true of phrases and idiomatic forms.

(c) GROUPING. The recognition of groups of words must be practiced every day, the children now understanding the help it gives to actual reading. Lead them, when preparing a new lesson, to look ahead in each sentence for the immediate recognition of phrases. They must also be definitely taught that no one group goes beyond a comma, and that to breathe before the group is finished will spoil the meaning. To prevent bad habits in this respect, give general rules in regard



to proper places for taking breath when reading aloud, and see that these rules are entered during every reading lesson.

**3. Breathing.** Proper breathing is essential to good oral reading, and special exercises in breathing should be given in this grade. These exercises may precede the reading, occupying a minute or so at the beginning of the recitation, or they may be given to the whole school once or twice a day at a short recitation.

Have the pupils stand erect, place their hands upon the lips, throw the chest out, and inhale slowly until the lungs are filled, then, at a given signal, exhale slowly. This movement is easily regulated by the teacher raising the hand slowly while the pupils inhale and lowering it while they exhale. The exercise can be varied in a number of ways: (1) As the pupils inhale let them raise their heads above their hands, then lower them as they exhale. (2) Let the pupils place their hands upon their chests and tap them lightly with the palms of the hands as they exhale. (3) The production of tones, as *a ah, o*, can also be practiced with this exercise.

Train the pupils in breathing until it becomes a fixed habit to fill the lungs before beginning to read, and to take breath naturally at every convenient place, whether need of breath is felt at that time or not. This will prevent the sense of hurry and fatigue that comes from the breath being suddenly exhausted. Correct breathing will enable the pupil to read phrases and clauses through to the very end with smoothness and ease. Recall continually to the mind of the children that the meaning of a group of words is lost and the expression of it ruined when the reader must stop before the end to take breath.

*Caution.*—(1) Children of this age have less lung capacity than adults, and care must be used or the exercises will be made too strenuous. The breathing should be deep but gentle, the inhaling and exhaling done without undue effort. Learning to produce the inhalations and exhalations is safer than to try to make expressions. The latter should be used

with care, since it often causes dizziness, faintness or headache, due to the increased pressure upon the lungs. These points are emphasized here not only for hygienic reasons, but because of the important bearing correct breathing has upon successful oral reading.

(2) Do not allow pupils to sit with arms folded across the chest. This practice restricts the breathing, brings the shoulder forward into an unnatural position, causes the vocal chords to protrude and impedes a lot of much general injury.

(3) The breath should always be taken into the lungs from the nose. The habit of breathing with the mouth open is both unnatural and dangerous. It admits the air to the throat and lungs before it is properly warmed, often causing sore throat, catarrh and even a serious attack of the bronchial tubes and lungs. Impurities of all sorts that nature intended the nostrils to prevent are also admitted into the system through the open mouth.

(4) While breathing exercises are so vitally related to oral reading that they may very properly occur the first minute or two of the reading recitation, the two should be kept entirely separate. After the reading begins, it should not be interrupted for the breathing exercises. Neither should a pupil be stopped in his reading and told to "take breath." Later practice will prevent a free and full expression by the pupils.

**4. Bad Habits.** Children are prone to grow rapidly and this fact sometimes causes an irritable nervous system that results in awkward movements and bad habits. Some of these are being slow to rise when called upon, standing with all the weight upon one foot or with knees loosely bent, half standing, clinging to or resting upon the desk with one hand, beginning to read when rising from the seat, beginning to sit down while reading the last sentence.

All these should be discouraged or prevented by keeping the body and mind of the pupil alert and ready at all times to the rules established for the reading period. Keeping in

mind that the bodily movements react upon the mind and that careless thinking will be found along with careless movement; interest should be created and kept vivid throughout the entire lesson, with no slouching allowed, either when standing or sitting.

**5. Rules for Readers.** Good standards of reading should by the third year be fairly well established as habits. However, pupils will soon lapse from grace in these matters unless the teacher is ever on the alert to prevent bad habits by constantly enforcing proper ones.

In addition to the rules given to first and second year pupils, teach the following:

(1) Read slowly enough so that every word will be clear and distinct, but not slowly enough to break the phrasing.

(2) Open the mouth well when reading. The voice needs to be carried forward. When the teeth or lips are too nearly closed while reading or speaking, the voice is forced backward and lost, or the utterance made thick and indistinct.

(3) "Speak clearly, if you speak at all."

Carve every word before you let it fall."

**6. The Alphabet.** In the work of the first year we suggested ways by which the alphabet may be taught without any set time for it and without detracting from the interest of the reading. The alphabet, then, may be taught incidentally, as the form of seat work, building names and other words with sticks or pebbles, and later, with printed alphabets, as an adjunct to the penmanship lessons, and in connection with phonics.

Where the above suggestions are followed wisely, a child seldom reaches the second year without knowing all the letters of the alphabet by form and name. He has learned them indiscriminately, without regard to order, as incidents to other lessons. However, if the work in phonics has been properly done, he has learned that each letter stands for one or more sounds, and that certain combinations of letters always stand for the same sound, as *ay*, *at*, *ight* (see *Phonics*,

page 87). He also soon learns that the letters are intimately and inseparably associated with the art of spelling.

In the second year, he finds out that he can make his knowledge of the alphabet serve him to make out new words; at least, that if he names the letters as they occur in the strange word, his teacher or some one else will be able to pronounce the word for him. This keeps the names of the letters fresh in his mind, as do his penmanship lessons and his spelling lessons.

In various ways he gets help from the letters. Still it often occurs that he reaches the third year of school and knows little or nothing of the regular order of the letters of the alphabet. This is the only new thing about them to learn and is best taught as a game. The pupils may choose sides and see which ones can say the letters in order. At the recess or recess time children may hear each other say the letters in order, keeping track of all who do not fail. The teacher may now and then, in the period for phonics, go to the board, saying, "I wish to write the letters of the alphabet in order and write them very quickly. Please give the names, one after the other, as they come. Mary, begin." On one row, back the next, as quickly as the children can speak, names are given and the teacher writes. At another time, a minute or two may be devoted to a rapid drill after this form: "What letter comes next after *y*?", "After *m*?", "After *c*?", "After *h*?", and so on till no child can be found who is uncertain.

These exercises are amusing and interesting, make a useful diversion, and, if followed for a short time in the third year, will enable the children readily to use the dictionary, atlas and telephone directories, cyclopedia and other indexed books when they need them—a thing many carelessly taught pupils of the higher grammar grades are unable to do.

**7. Phonics.** Review as much of the work of the second year as may be necessary to bring what they have learned clearly before the pupils. Continue the lines of work given on pages 83-92, and add new phonograms, blends, end-

ings and words as rapidly as the advancement in reading requires, but be sure that all this work is thoroughly done. As a result of these lessons, the child's power to recognize and pronounce new words should increase rapidly. Drills in enunciation, articulation and pronunciation should be frequent, but need not occur daily.

Introduce some special exercises to secure projection of tone, flexibility and smoothness, as Terrence's *Blow, Bask, Blow and Suck and Loo*. Exercises to cultivate energetic expression and emphasis may also be given, as *Chance, Chance, Chance, Oh, Stand, Oh, Stand*. Teachers may use to advantage "Sally and Lou and Lou" from Joseph Miller's *Columbus*. Even better results will be reached by using all of this material and the two named from Terrence. The dramatic element always appeals to the children and calls out their best efforts.

These particular poems are beyond the grade of reading level for the third year, but if written upon the board and left there, the work will be more easily learned and rendered than when learned entirely from imitation. One of the best poems for this purpose, in their own grade, is *A Visit from St. Nicholas*, found in many reading books.

**8. Rules for Pronunciation.** The principles of pronunciation taught in the first and second grade in an informal manner, can, in the latter part of the third year, be formulated into rules, if this step is desired.

1. In words of one syllable ending in *e*, the vowel is long, as in *able*. When the vowel is the last letter and the only vowel in the word or accented syllable, it has the long sound, as in *me*.

2. Silent *e* at the end of a word or syllable makes the preceding vowel long, as in *jet*, *face*.

3. In words of one syllable, not ending in *e*, the vowel is short between two single consonants, as in *cat*.

4. In words of more than one syllable, the first vowel is usually long when there is but one consonant between it and the next vowel, as in *awful*. It is short when there are

two or more consonants, or a double consonant, between it and the next vowel, as in *springing, hilt*.

**9. Sight Reading for the First Three Years.** Any reading that is required without preparation is called sight reading. From the very fact that no chance is given for definite preparation, sight reading, as reading, cannot be prepared during the first year. The nearest approximation to it is a rapid review of single words and short idioms which have previously been thoroughly taught. Sometimes this drill is given from the blackboard or chart, sometimes, by the rapid showing of small cards upon which words have been written in large script with a rubber pen or a very heavy stub pen.

In the second year these sight drills should be continued upon words that have been discovered to be difficult for the class to remember. More often, however, the drills should be upon longer idioms and especially upon full phrases. Thus, the teacher prepares cards, as described, upon each of which may be such an expression as *a large, beautiful wax lily; a fine new lute in Berlin; a new, new football; a pretty, red geranium blossom; a humming, buzzing bumble bee; an old broken stone house; a very, jet-set horse; a good name is rather to be chosen than great riches*.

It will help forward the daily lessons better if the teacher selects the phrases in the book from lessons that are soon to be read. These phrases should be taught in some preparatory period and not allowed to interfere with the regular reading lesson.

During the last term of the second year, pupils may be led to review portions of various first readers for exercise in sight reading.

In the third year the sight reading of the first term does not differ from that of the second year. Nothing should be attempted that has not been previously taught with care. In the second and third terms of the year the sight phrases may be considerably lengthened; pupils may be given many easy sentences to read at sight; frequent tests upon earlier

reading lessons in second and third readers may be given as sight lessons, and occasionally the teacher may require something entirely new to be read in this way. When this is done, the teacher must be certain that no new words are to be found and that the selection is simpler in style than that used in the daily lesson.

*Cautions.* (1) Sight reading must always be easier than a lesson that is to be prepared beforehand. Difficult sight reading begets numerous bad habits.

(2) The use of sight reading should always be limited. It is but a test and there are nearly always members of the class who will not be prepared for it, because of absence or for other reasons.

**10. Silent Reading and Oral Reading.** It is by means of silent reading that we gather thoughts from the printed page. It is by oral reading that we give those thoughts, in the exact words of the author, to others. It is frequently by oral reading that we test the correctness of silent reading. Many times the eye needs the assistance of the ear to prove or disprove the accuracy of the first reading. This is particularly true in the primary grades. To a less degree, and seldom except in intricate passages, this is true with adults.

In any case, silent reading must precede the oral reading. This is true even when there is no time given for preparation. The eye glances ahead of the words that the voice is uttering and enables the reader to go on without faltering, because confidence is thus maintained.

During the last term of the third year, pupils should gradually be trained to do this mechanical looking ahead without losing the thought of what they are reading or forgetting to impress their hearers by their pleasing interpretation of it. As an occasional help in such training, pupils may be asked to read a simple new selection aloud with the understanding that at a given signal they look instantly away from the book but continue to read as long as they can recall the words they have seen in advance. At the first

trial the teacher may be surprised by the difference in power shown by individuals in the class.

It is self-evident that, as a rule, among older pupils and adults the amount of silent reading done greatly exceeds the amount of oral reading. In the first three or four years the amount of each is very nearly the same. Oral reading is needed in order to test the accuracy of the thought-putting (silent reading). It is also needed as an opportunity in which pupils may be trained in emphasis, inflections, pauses and all else that goes to make expressive reading.

**11. The Critical Period.** The third year is the critical period in oral reading. The children are becoming self-conscious, and unless the teacher uses her utmost tact and skill, their hitherto buoyancy of expression will be transmuted into the mechanical utterance of stilted phrases. On the other hand, if this fault can be prevented, and the children can be led to continue through the year with the same freedom of expression which characterized their reading in the first and second grades, they will enter the fourth grade well prepared for a broader study of the principles of expression which are essential to good oral reading in the other grades. Oral reading, during the third year, should therefore receive careful attention.

(a) **PREVENT FAULTS.** Remove all obstructions to expression before the pupils are called upon to read the selection orally. See that they can pronounce all new words, and that they understand the meaning of every sentence and paragraph in the lesson.

(b) **BRING OUT THE THOUGHT.** By questioning, lead the pupils to discover the thought for themselves. They will then be much more liable to express it in their reading.

(c) **CRITICISMS.** Pupils should be allowed to read without interruption. When the pupil is through, criticisms under the direction of the teacher may be given. When these are offered by the pupils, they should be confined to the render-



ing of the selection, or the portion of it read, and the pupil offering the criticism should be expected to illustrate his criticism by reading the part criticised. By far the most productive criticism is to ask the other pupils to point out the good features of the reading. Whatever criticism of language is necessary should be made by the teacher. In general, when one pupil is reading, the others should listen, with book closed.

(d) INTEREST. The children are especially interested in selections that are full of a trim, and much of the reading matter should be of this kind. Allow the pupils to present the story as a play, whenever it lends itself readily to this treatment. (See *Dramatization*, pages 1-118.)

**12. Illustrative Lesson.** The following type lesson is given as a suggestion. Each teacher will have her own plans, and her own way of leading pupils to interpret and enjoy literary selections. The chief purpose of this lesson is to show what facts must be established before the children can understand the author's meaning, and this must be clearly perceived by the teacher before the lesson is given. A study of the poem which we use as the basis of the illustrative lesson shows that the author's purpose was to express the longing of the child for things he has not seen, and his effort to satisfy this longing. In the accompanying illustration, the boy's purpose in climbing the tree, then, is not to pick the cherries, nor to accomplish a daring feat; it is to look over the garden wall and fill his soul with the beauty of what lies beyond.

The illustration emphasizes the thought, when studied from the author's point of view. But if studied with the idea of the cherries, or the act of climbing foremost in mind, it leads the child entirely away from the thought which the poem was intended to bring out. Attention is called to these points of view for the purpose of showing how a picture may be a help or a hindrance in interpreting a selection. In making such preparation, the teacher should give both the picture and the poem careful study.



FOREIGN LANDS

Up to the cherry tree,  
Who should climb her little me,  
I held the trunk with both my hand  
And looked abroad on foreign land.

I saw the next-door garden lie,  
Adorned with flowers before my eye,  
And many pleasant places more  
That I had never seen before.

I saw the dimpling river pass  
And by the sky's blue looking-glass;  
The dusty road, go up as I'd win  
With people tramping in to town.

If I could find a higher tree,  
Farther and farther I should see,  
To where the grown-up river slips  
Into the sea among the ships.

To where the roads on either hand  
Lead onward into fairy land,  
Where all the children dine at five,  
And all the playthings come alive

—ROBERT LOUIS STEVENSON.

*Teacher:* Our lesson today is about foreign lands. This expression is a little hard for me to understand. Who can explain it to me? Can you, John?

*John:* I think it means far away lands or places we have not seen.

*Teacher:* Good. Who can name a foreign land? Kate.

*Kate:* Italy.

*Teacher:* That's right. Another, Mary.

*Mary:* Germany.

*Teacher:* Right. If we were to visit a foreign country, what do you think we would see, Howard?

*Howard:* We would see the ocean and big cities, and the people would be strange. May be we would see high mountains.

*Teacher:* Good. Now let us look at our lesson. Read the first stanza to yourselves. Who was it in our story who saw foreign lands, Rob?

*Rob:* It was a boy.

*Teacher:* How did he see these lands, Helen?

*Helen:* He climbed a tree.

*Teacher:* Good. That was an easy way to take a journey, wasn't it? Now read the stanza for us, Edna.

(Edna reads.)

*Teacher:* That was well read. Read the second stanza silently and tell me what the little boy saw. The first word of the second line is hard. Does anyone know it? It is *adorned*. (Teacher pronounces it.) Pronounce it, class. Give it again, Rob. Again, Helen. Once more, class. It means *made beautiful*. What was adorned?

*Class:* The next door garden.

*Teacher:* Right. What adorned the garden, Kate?

*John:* Flowers.

*Teacher:* Now tell me what the boy saw, John.

*John:* He saw the flowers in the garden next door.

*Teacher:* Why do you think he had not seen that garden before, class?

*Henry:* May be there was a high fence around it.

*Tom:* May be there were tall trees in front of it.

*Teacher:* What do you think, Mary?

*Mary:* There might have been a little hill in front of the garden.

*Teacher:* Yes, that may have been true. Read this stanza for us, John.

(John reads.)

*Teacher:* I should like to hear you read it too, Kate.

(Kate reads.)

*Teacher:* Look at the next stanza, class. What is this word, d-i-m-p-l-i-n-g, Edna?

(Edna pronounces the word.)

*Teacher:* Right. What is a dimple, Howard?

*Howard:* It is a little hollow in a baby's cheek when it laughs.

*Teacher:* That is good. What could make a river have dimples, Helen?

*Helen:* The wind might blow it.

*Teacher:* Surely. What do we say of the river when the wind blows it?

*Helen:* We say it has little waves.

*Teacher:* Right. Now shut your eyes and see if you can see the river covered with little waves. What color are the waves you see, Howard?

*Howard:* Some of them are white and shiny, some are blue, and some are dark.

*Teacher:* Why, that is a pretty river you see. Let us call it the *dimpling* river. What is it, class?

*Class:* The dimpling river.

*Teacher:* Open your eyes now, and tell me what the boy saw in the river.

*Edna:* I think he saw the blue clouds.

*Teacher:* Why, Edna?

*Edna:* Because it says the river was the sky's blue looking place.

*Teacher:* That's a good thought. Have you ever seen blue and white clouds pictured in the water? Are they pretty? Yes, they are beautiful. What else did the child see, Rob?

*Rob:* He saw the dusty road with the people walking up and down them.

*Teacher:* Read this stanza, Mary.

(Mary reads.)

*Teacher:* Read it again for us, Helen, and try to make us see that blue looking place.

(Helen reads.)

*Teacher:* That was well read. I shall read the first line of the river. Shall you, class? Read the next stanza to yourselves. What did the child wish he could do, Rob?

*Rob:* Find a higher tree.

*Teacher:* Why?

*Rob:* He wanted to see farther.

*Teacher:* What did he think he could see if he were on a higher tree, Helen?

*Helen:* The river slip into the sea.

*Teacher:* What is a grown up river, class?

*Class:* It's a big one.

*Teacher:* Good. What helps a river to grow up, Edna?

*Edna:* Little rivers run into it and make it bigger.

*Teacher:* That is a good answer. What kind of ship should we see on the ocean, Howard?

*Howard:* Big ones.

*Teacher:* That is right. What is it the grown-up river does, Rob?

*Rob:* Slips into the sea among the ships.

*Teacher:* Tell me that together, class. (Class repeat.) Tell it again, Kate. (Kate answers.) Now read the whole stanza, Rob.

(Rob reads.)

*Teacher:* Read it once more, John.

(John reads.)

*Teacher:* Would you like to see the river slipping into the sea among the ships? If you could do that, what would you like to do next, Rob?

*Rob:* Get into a boat and sail away.

*Teacher:* What fun that would be! Let us see how far this little boy would like to see. Who is ready to read the last stanza? Tell me, first, what the last line means. What do you think it means, John?

*John:* It means that our rocking-horses, our tin soldiers and engines would all be real ones and not make-believe ones.

*Teacher:* Read the stanza, Howard.

(Howard reads.)

*Teacher:* Now let us look at the picture a moment. Why did this little boy climb the tree, Mary?

*Mary:* He wanted to see something new and pretty.

*Teacher:* Mary thinks well. Why did he climb the cherry tree, Rob?

*Rob:* Because it was the highest one he could find.

*Teacher:* What do you think was the prettiest thing he saw while in the tree, Helen?

*Helen:* The flowers in the next dear garden.

*Teacher:* They must have been pretty. What do you think, Edna?

*Edna:* I think the dimpling river and the sky.

*Teacher:* Yes, they were pretty. What do you think the boy liked best, John?

*John:* The sea and the ships.

*Teacher:* John, did he really see those things? Look at the fourth stanza.

*John:* No, he just wanted to see them.

*Teacher:* Now let us read the whole poem, just to help us remember the beautiful things the child saw. Read the first two stanzas, Kate; the third one, Howard; the last two, Edna. Read the whole poem, Helen.

**13. Selection of Reading Matter.** Permanent literature may be given more freely during the third year than heretofore. The vocabulary, oral and written, has been much increased, and the literary taste of the child has been improved by the selections he has heard from good authors. Moreover, his ability to help himself now spurs his ambition to try to read independently from his readers and from other books. He is also beginning to realize that there is a world of books before him, and that there are books he may read that are not reading books.

Without being able to express his literary needs, the child's nature reaches out for reading matter that is beyond the commonplace, trivial atmosphere of his daily life, and welcomes tales and poems that embody the unusual, the remote, and the nobler, higher relations of life.

(a) **MYTHS, FABLES AND LEGENDS.** The child's imagination takes eager hold upon the characters and situations expressed in fables myths, legends, fairy tales and poems, all of which form most valuable reading for the third year, when selected judiciously as to content, vocabulary and simplicity of style.

Third year pupils are not always of the same age and capacity, hence we shall not attempt to say just what fables, myths, tales or poems should be given to them, nor just how many. Each teacher knows the mental strength of her own class better than any one else, and therefore is better able to judge for them.

(b) **OTHER READING.** We may say in general that the world's permanent literature must be interwoven, hereafter, with the other reading. The imagination is to be fed, but the pupil must also begin upon the second stage of reading, viz., reading to learn, reading for the information it gives. Heretofore his time has necessarily been devoted to learning to read. These first difficulties are not entirely conquered, and will not be for at least a year or two more. However, they need no longer occupy the child's reading time exclusively. Every day now, as a part of the regular

reading lesson, something should be introduced that will give the pleasure that comes with the acquirement of knowledge. A fair balance is thus preserved and the higher element in the reading acts as a healthful mental stimulant.

(c) SUGGESTIONS. To aid the teacher in choosing wisely for the children of the third year, we herewith offer the following suggestions. That they may meet the needs of the third year pupils, the fables, myths, legends and tales which are selected should possess certain indispensable characteristics:

(1) They should be suitable as to the topics treated. These may appropriately be (a) insects, birds, quadrupeds or other forms of animal life; (b) forms of plant life, particularly flowers and trees; (c) sun, moon and stars; (d) natural phenomena, as clouds, rain, the rainbow, vapor, dew, frost, hail, snow and the winds and their effects; (e) physical features of the earth, as mountains, rivers and fountains; (f) precious stones.

(2) The second notable characteristic should be simplicity of idea. There should be no complexity of plot, no crowding of characters, no great prolongation of time. The characters should be few, the action rapid and direct. The imagination of the child will satisfactorily fill out the stage settings when needed.

(3) The language should be simple, yet elevating. Sentences need to be short and direct, in order to keep the situation dramatic, and they must be simple enough for the child to follow readily. Words and figures should be simple, yet carefully chosen for their graphic picturesqueness.

(4) The moral should be easily apparent and come as the natural, inevitable outcome of the situation.

(5) They should not be such as to leave a morbid or fearsome feeling as a result of the reading. They should satisfy the sense of justice but call forth no thought of revenge. Pity, tenderness, forbearance, bravery and noble motives, portrayed vividly in the imaginary characters, live again in the child.



To illustrate: The children love the story of *The Three Bears*. Golden Hair is as good as she is beautiful, and in entering the home of the bears has no thought of doing wrong. The danger of the situation is realized by the class but not by the little girl, who is their idol from her first introduction. The children enjoy the dramatic situation keenly and watch breathlessly for the return of the bears, wondering what they will do to poor Golden Hair, by this time fast asleep upon the bed of the little wee bear.

When the bears return, the conversation of the three amuses the children greatly. They anticipate with huge delight the various surprises of the bears. The children almost forget Golden Hair's dangers in the pleasure of this scene. When the bears at last find her, the author of all the mischief, the children are keyed up to the highest pitch of doubt and fear as to the outcome. And what a relief it is when the bears become hospitable and make Golden Hair welcome instead of punishing her! At last, when the bears escort her safely home, a universal sigh of content follows from the children. What was so near a tragedy is averted by the gentle goodness and beauty of Golden Hair. Her good qualities overcome even the savage instincts of the three bears and convert them into delightful hosts. The children feel that "all is well that ends well."

The old form of this tale brought the three bears home hungry and ferocious and left the small readers in tears over the untimely death of poor little Golden Hair. This form, no doubt, was more in accordance with bear nature than the revised version, but it certainly was far less satisfactory to read and far less satisfactory in its effects upon children.

So, too, with *Little Red Riding Hood*. What person with a spark of humanity could fail to rejoice that this tale, as modernized, metes out justice to the wicked old wolf before his evil designs can be carried out? The story loses nothing of dramatic power by having the woodmen arrive, not a second too soon, to save both Little Red Riding Hood and the grandmother.

The element of improbability in the revisions is no drawback. Imagination, at this period, makes all things probable in a story. Witness the enjoyment children have found in *Alice in Wonderland* and in *The Wonderful Wizard of Oz*.

**14. Poems.** Poems for the third year of school life should be chosen with discretion. There are great numbers of nature poems which are very desirable, many of them weaving a beautiful story around some flower or other natural object. Good examples of these are *Discontent*, by Sarah Orne Jewett; the *Kaiserblumen*, by Celia Thaxter; and *The Mountain and the Squirrel*, by Emerson. There are, also, almost countless delightful poems treating directly of child life, as *Pittypat and Tippy Toe* and *Wynken, Blynken and Nod*, by Eugene Field; *The Land of Counterpane and Travel*, by Robert Louis Stevenson; *The Children's Hour*, by Longfellow; *In School Days* and *The Barefoot Boy*, by Whittier; *The First Snowfall*, by Lowell. In fact, there are so many good poems that one hardly knows where to stop in choosing.

Care should always be taken to see that the poems are suited to the age of the children, are more or less dramatic and couched in beautiful language, and have no bad effects. Teach the name of the author with the poem, and often have select parts memorized. See *Memorizing Selections*, pages 158-160. The selections should be learned accurately.

**15. Supplementary Reading.** We have already given a suggestive list of desirable books to read to primary children. The ones that the children may read for themselves must be simpler in content and style than those which are read to them, else they soon become discouraged and lose their ambition to read for themselves.

During the third year, the independent reading, for the first two terms, should be provided for and carried forward in a manner similar to that commended for the second grade. However, if the class makes the progress expected during the last term of this year, the children will be able to read some books almost without aid.

During the third year, children should read through three or four third readers, with frequent reviews of the more difficult portions and of the parts that call forth the greatest variety of dramatic expression. Children of the third grade may read by themselves such books as the three volumes of *In Mythland*, Helen Beckwith; *Children of the Palm Lands*, Alice E. Allen; *Bobtail Dixie*, Abbie N. Smith and *Colonial Children*, Mara L. Pratt, all of which are published by the Educational Publishing Company, Chicago.

*The Child of Urbino*, *Nurnberg Stone*, *A Dog of Flanders*, Louise de la Ramee, published by the Educational Publishing Company, Chicago; *Muloch's Little Lame Prince*, edited by E. Norris, Educational Publishing Company, Chicago; *The Seven Little Sisters who Live on the Round Ball* and *Ten Boys who Lived on the Road from Long Ago to Now*, Jane Andrews, Ginn & Co., Chicago; and *The Tree-Dwellers* and *The Early Cave-Men*, by Ruth Dopp, Rand, McNally & Co., Chicago, are suitable books varying somewhat in difficulty.

For pupils who can read a little more and for the use of fourth year classes, the following books are excellent, though it must be remembered that the ability of children to read intelligently differs exceedingly, even in the same class, and that what may be easy reading for one locality would be very difficult for children of the same age in another: Hans Anderson's *Fairy Tales*, two volumes, edited by Miss Stickney, Aesop's *Fables*, edited by Miss Stickney, *The King of the Golden River*, by Ruskin, Ginn & Co., Chicago; *Black Beauty*, by Anna Sewell, and *A Child's Garden of Verses*, by Stevenson, Rand, McNally & Co., Chicago; *Eight Cousins* and *Little Men*, by Louisa M. Alcott, and *Nelly's Silver Mine*, by Helen Hunt Jackson, Little, Brown & Co., Boston.<sup>1</sup>

**16. Reading and Study.** Children should begin in this year to see how reading helps other subjects. To this end,

<sup>1</sup> These publishers and many others offer so many excellent books for children that we can only name a few as types of style and grading, leaving the teacher and school officers to add to the list as needed. They will send catalogues containing descriptions of the various editions and price list upon request.

use now and hereafter, every text-book to supplement the reading book. Have the little arithmetical problems read aloud from the board and from the book, and lead the child to see that unless he can read these correctly and understandingly he need not expect to do the work required; so with other subjects, until he sees that the first step in any lesson is to read correctly. If this idea is once clearly demonstrated to a child, he has a new and strong incentive to mental effort. All reading from text-books, however, must be done with precisely the same care as that of the regular reading lesson. Thought interpretation and correct expression are demanded here as in the lesson assigned from the regular reading book. Reading is reading, no matter what the book or the time.

**17. Racial Literature.** During the last term of the third year in reading, pupils may read with great pleasure and profit stories and poems relating to other times, countries and races than their own. Children are always intensely interested in what other children do and say; hence, the introduction to racial literature should be in the form of stories and poems of *children*, in order to take advantage of the true point of contact, and to rouse the interest that is inherent rather than developed.

The section of Longfellow's *Hiawatha*, which so beautifully depicts the childhood of the Indian boy, may now be read intelligently and will be much enjoyed. *Nikolina*, *The Leak in the Dyke*, *Piccola* and *The Boy Van Dyke* are other poems in this line full of interest for the children. *Children of the Palm Lands*, *Clovernook Children*, *Children of the Cold*, *Children of Many Nations* and *Colonial Children* are all prose types of this kind of literature. They also form the best material possible for developing a love for good biography and history.<sup>1</sup>

Fortunately, there is an abundance of this kind of literature—poems and entire books that give really graphic

<sup>1</sup> A few books in the above list are too difficult for third grade pupils to read by themselves, but they are given as types of thought-content

pictures of racial differences in physique, clothing, home life, customs and habits.

The early introduction of permanent literature, and reading matter based upon topics of vital interest to children, cannot be too highly commended. This is what makes it worth while to try to read. This is what inculcates the reading habit in children. This is what gives them a happy introduction to the great world of literature and develops their interest, while still but children, in libraries and in the use of the books they contain.

To create such an appetite for the best reading that a taste for the lower forms is impossible at any time of the pupil's life should be the one controlling thought of every teacher. The work must begin early, and only that which is free from evil taint in word or suggestion may be allowed to come into the hands of any pupil during his school life. With such early training, a young woman or a young man will not often deliberately choose bad books for companions when school days are of the past.

*Cautions.* (1) Prepare the way for the introduction of permanent literature by establishing a good vocabulary; by telling and reading to children many interesting things that will arouse an interest in matters outside of themselves and their limited experiences; by developing the general intelligence; by waiting for the right degree of maturity.

(2) Take the child where you find him, make use of what he really knows, build securely upon that, hold high ideals of what is in store for him, and let him come naturally to the point where he may be expected to assimilate a good portion of what belongs to him in the way of pure literature.

(3) Bear in mind that the child must read much in order to read easily and intelligently, also, that he should read fluently in any one grade before he attempts the next.

(4) To be able to read and not to have a love for good literature is dangerous, to be able to read and have a love for bad books is calamitous, to be able to read and have

an unswerving desire for only the best that books contain is the safeguard of youth, the solace of age.

**18. Reading as an Artistic Accomplishment.** Because of its lack of utility, reading as a social accomplishment is not taught. Reading as a means of giving intellectual pleasure to others, in private or in public, is hardly considered in these days. Reading as the source of combined culture and pleasure, in which all the members of a family might join, has, seemingly, gone out of fashion. The members of the family occupy themselves with different pursuits and the ties of family and of home are sensibly weakened.

To permit reading aloud to become a lost art is deplorable. Never before were there so many books worth reading aloud. Never before has there been greater need to strengthen home ties and make the family interests a unit. Therefore, we urge teachers to do everything possible to awaken among their pupils an appreciation of oral reading as an artistic accomplishment of great and lasting value.

The first step toward this desired end is for teachers to become good readers themselves and to make frequent occasions to read aloud to their pupils. This proves the pleasure that a good reader is able to give to others and establishes a standard of good reading for immature pupils to follow. As they grow older and have more experience in reading aloud, they will cease to be imitators and their own individuality will be stamped upon their reading.

The next step is to encourage pupils to read before the school and to take things home to read to the circle there. Select stories, poems, anecdotes, fables—anything that is power in idea and language and that has in itself power to hold the interest of the reader and his listeners. Help the pupil in private with his selection, and then let him read it as a part of the morning or afternoon opening exercises.

These independent readings have already been discussed at considerable length, but their value is too great to make necessary an excuse for repetition. During the third year,

and thereafter, such exercises should become more and more frequent as a regular part of the school program.

Pupils should be made to feel that people of genuine culture and refinement enjoy hearing a good reader as much as they enjoy hearing good music. This thought should be instilled by practical illustrations from the neighborhood, by the evident pleasure the patrons get from the Friday readings, by quoting complimentary remarks on the reading of the school. If these compliments have been fully earned they will be encouraging and breed no vanity. It will be helpful to teach what some distinguished people have said about good reading, especially if the teacher tells the pupils enough about the men to make them seem real and to give weight to their opinions. The following quotations are good:

If I could have a son or daughter possessed of but one accomplishment in life, it should be that of good reading.—*John Ruskin.*

Of equal honor with him who writes a grand poem is he who reads it grandly.—*Henry W. Longfellow.*

People of taste and culture cannot afford to be wanting in so rare and elegant an accomplishment as good reading.—*E. H. Chapin, D D.*

A good reader summons the mighty dead from their tombs and makes them speak to us.—*Ralph Waldo Emerson.*

No branch of study has a greater educating power than good reading, and yet we have very few who can read even intelligibly.—*Horace Mann.*

If the crowns of all the kingdoms of the empire were laid down at my feet in exchange for my books and my love of reading, I would spurn them all.—*Fenelon.*

**19. Causes of Poor Reading in Schools.** Leaving out of the question such causes as defective vocal organs and extreme nervousness, the following are chief among the causes of poor reading:

(1) Teachers fail to appreciate the value of reading as the foundation study.

(2) Teachers are not, themselves, good readers.

(3) Children are hurried from one grade to another too rapidly.

- (4) Interest is lost, through lack of variety and lack of dramatic element in the reading given.
- (5) The imagination does not have sufficient exercise.
- (6) Children are usually not allowed to have enough individual dramatic work or short-story telling.
- (7) Teachers are not skilful questioners.
- (8) They do not secure and use illustrative material properly.
- (9) The methods are often poor and monotonous.
- (10) Teacher and pupils sometimes are lacking in sympathy, and therefore fail to appreciate and properly express the feeling in the selection.
- (11) Not enough supplementary reading is provided.
- (12) Children are not made to feel the need of effort in reading anything outside of regular reading books.
- (13) Vocal powers are not sufficiently trained by means of exercises for articulation, inflections, emphasis and voice projection.
- (14) Selections are often too difficult for the pupils to comprehend, and thus much time is wasted which could be spent to advantage in reading many selections of simpler grade.
- (15) Sometimes teachers have interest, but are ignorant of good methods; sometimes they understand methods, but lack the interest needed to use them properly. No real progress in reading will be made by a school unless interest and skill are combined.

**20. Material for Drills.** Realizing that definite helps along specific lines are not always easy to find, a few pages are added for the purpose of saving teachers a wearisome search for needed material.

As opportunity occurs, teachers should add to the given lists from their own discoveries or from printed articles pertinent to the subjects for which help is needed. A careful reader of the foremost educational papers will not need to wait long for valuable suggestions from practical teachers.



## DRILL EXERCISE FOR ARTICULATION. (1) First Year.

Say "Andrew, a d you, and you, and you."

Would you say a jay is a blue bird or a bluebird?

Twine three twines thrice three times.

If three tiny tots went out to tea,  
And each little tot took kittens three,  
And each tot and kitten drank three cups of tea,  
How many threes do you think there would be?

Twisting twines or twining twists,  
Each is hard upon the wrists.

Little Tiny Toes had ten tiny little toes.

Kitten Katten went to Stratton on a summer day;  
Kitten Katten with no hat on heard a donkey bray.

Funny Fanny Flynn fried four fat fish for five frightened fishermen.

## (2) Second Year.

Gayly chattering to the clattering  
Of the brown nuts downward pattering,  
Leap the squirrels red and gray;  
On the grass land, on the fallow.  
Drop the apples red and yellow;  
Drop the russet pears and meliow,  
Drop the red leaves all the day.

Betty Botter bought some butter,  
"But," said she, "this butter's bitter;  
If I put it in my batter,  
It will make my batter bitter;  
But a bit of better butter  
Will but make my batter better."  
So she bought a bit of butter,  
Better than the bitter butter,  
Made her bitter batter better.  
So it was better Betty Botter  
Bought a bit of better butter.

Sam Slick's sloppy shoes and socks shocked simple Susan at the shoe shop.

With the skin he made him mittens;  
Made them with fur side inside;  
Made them with the skin side outside;  
He, to get the warm side inside  
Put the skin side outside;  
He, to get the cold side outside,  
Put the warm side, fur side inside.  
That's why he put the fur side inside,  
Why he put the skin side outside,  
Why he turned them inside outside.

A piper piper blew a penny pipe for a penny piper and a penny piper gave a penny pie for the piper's penny pipe.

Slender Sam Slimber, sleek and slim, sawed six slender saplings into six slender sticks.

Did you? Could you? Might you? Would you? Don't you? Should you?

Let ten little men in seconds ten find out by their own brain,  
Ten times ten and ten times ten and ten times ten again

She sells sea-shells. Does she sell sea-shells? Sea-shells she sells.

Is this, then, the team that Thomas tried?

(3) Third Year.

Had I strength in my wrists  
Like a twister that twists,  
I'd face all the frosts and face all the mists,  
I'd swim the salt seas or bestride a brisk breeze,  
I'd cross prickly heather in all sorts of weather,  
Just to lengthen the rope of Pat's pig in a poke.

Don't you think the lasts last well?

Theophilus Thistle, the successful thistle-sifter, in sifting a sieveful of unsifted thistles, thrust three thousand thistles through the thick of his thumb.

Little Peter Peterkin made a warm fire of peat,  
Then the warm fire of peat warmed Peter Peterkin's feet.

When a twister a-twisting would twist him a twist, in twisting  
the twist he three twines doth intwist, but if one of the twines that  
he twisteth untwist, the twine that untwisteth untwisteth the twist

In far-off Tokyo, I had a cup of Mocha, O;  
A cup of Mocha, O, had I in far-off Toyko.

In the lonely Isle of Wight,  
In goat and otter skins bedight,  
Lost in a stormy, wind-swept bight,  
I had a sickening, freezing fright.

Cross Christopher Cross is full of crotchets, crosses and crazy  
idiosyncrasies.

Amidst the mists and coldest frosts, with doubled fists and  
stoutest boasts, he still insists the sheeted ghosts are naught but  
icy snow-clad posts

Round and round the rugged rocks the ragged rascal ran.

If you stick a stick across a stick  
Or stick a cross across a stick,  
Or cross a stick across a stick,  
Or stick a cross across a cross,  
Or cross a cross across a stick,  
Or cross a cross across a cross,  
Or cross a crossed stick across a cross,  
Or cross a crossed stick across a stick,  
Or cross a crossed stick across a crossed stick,  
Would that be an acoustic?

- 21. Aids.** (a) BOOKS FOR TEACHERS. (1) First Year Only.  
*Primary Reading.* Educational Publishing Company.  
*Suggestions to Teachers in The Holton Primer, Teacher's Edition.*  
Rand, McNally & Co.  
*Suggestions to Teachers in the Thought Reader.* Summers,  
Ginn & Co.  
*The Werner Primer.* Taylor, American Book Company.  
(2) All Grades. Prefaces to *The Sprague Classic Readers.* Edu-  
cational Publishing Company.  
*Reading: How to Teach It.* Arnold. Silver, Burdett & Co.

- How to Teach Reading in the Public Schools.* S. H. Clark. Scott, Foresman & Co., Chicago.
- Waymarks for Teachers.* Sarah L. Arnold. Silver, Burdett & Co. New Education Series. Book I.
- Rational Method of Reading.* Ward. (Ward Manual). Silver, Burdett & Co.
- Teaching to Read.* J. L. Hughes. A. S. Barnes & Co.
- Special Method for Reading.* C. A. McMurry. Macmillan Company.
- Talks on Pedagogics.* Francis W. Parker. A. S. Barnes & Co., New York.
- Essentials of Teaching Reading.* E. B. Sherman & A. A. Reed. University Publishing Co., Lincoln, Neb.
- Reading in Public Schools.* Thos. H. Briggs & Lotus D. Coffman. Row, Peterson & Co., Chicago.
- (d) BOOKS FOR PUPILS. *The Children's Hour.* Eva Marsh Tappan. Books I—VIII. Houghton, Mifflin & Co.
- Poems Every Child Should Know.* Mary E. Burt. Doubleday, Page & Co., New York.
- Songs of Treetop and Meadow.* McMurry & Cook. Public School Publishing Co., Bloomington, Ill.
- Classic Stories for Little Ones.* Lida B. McMurry. Public School Publishing Co., Bloomington, Ill.
- Heart of Oak Books.* Charles Eliot Norton. D. C. Heath & Co., Boston.
- The Thought Reader.* Book I. Maud Summers. Ginn & Co.
- The Summers Readers.* Maud Summers. Frank D. Beattys & Co., New York.
- The Aldine Readers.* Frank E. Spaulding & Catherine T. Bryce. 5 books and Manual. Newson & Co., Chicago.

TEST QUESTIONS

1. Contrast the knowledge of reading which a child has at the end of his second year with that which he has at the end of his third year.
2. Compare the purposes of third year reading with those of the second year.
3. Why are breathing exercises essential to successful oral reading?
4. Give specific directions for conducting a breathing exercise.

5. Of what advantage to the pupil's expression are good physical habits while he is reading? Why is an indolent attitude—half standing, half leaning upon a desk—objectionable?

6. In rule one on page 98 occurs the expression, "but not slowly enough to break the phrasing." What is meant by the expression *break the phrasing*? Answer fully.

7. How many and what rules for pronunciation is it wise to give to third year pupils?

8. Discuss the use of sight reading under the following heads: (a) its value, and (b) the methods of using it in class. Test yourself and report how many words ahead of your voice your eyes can read. How does your power in this respect compare with the power of your pupils in the third year? If you are not teaching, test a few of your friends and give the result of your experiments.

9. Discuss the relation of reading to other lessons. What advantages can you see in having the children occasionally read from their other text-books?

10. Classify the causes of poor reading as given on pages 118-119 in such a way as to show those for which the teacher is primarily responsible and those for which the responsibility rests more directly upon parents and the school system. Which of these causes should be eradicated first? Do you think any of these causes have affected your teaching of reading or will affect it? If so, what difficulties do you see in the way of removing those causes?

## CHAPTER FIVE

### LANGUAGE

**1. The Problem Stated.**<sup>1</sup> When children enter school at five or six years of age, they have acquired a large number of spoken words and idioms; but their knowledge of English is restricted from lack of experience calling out the necessity for more varied expression, and from ignorance of correct English forms. Of written language they have none.

As to the best means of teaching language to pupils of the primary grades, hardly two authorities can be found who agree. It will be seen, however, if the preceding statements are true, that definite means of some kind must be provided by which experience may be enlarged and knowledge of language forms be supplied to meet the growing desire for expression.

It must be admitted that the problem is a difficult one to solve, and is made much more so by the unnecessary formality with which a majority of teachers clothe the work. Others fail to get good results because they work without a definite aim and without a clear understanding of what is needed. Their efforts are spasmodic and they reach out in a haphazard way after something of which they have but the vaguest comprehension.

Many of the published works upon language teaching are so made that they point out one avenue of approach, making little or no effort to show other roads just as desirable.

**2. The First Step.** The truth that lies at the foundation of all successful language teaching is that language was invented because of the need to express thoughts and emotions and to preserve records for convenient reference. This being admitted, it follows without question that the

Many directions and plans bearing directly upon the teaching of both oral and written language in the primary grades will be found in the lessons devoted to teaching reading, and the teacher is urged to review these lessons in connection with the study of this one.

first step in the work of language teaching is to arouse thoughts and to inspire emotions such as will stimulate heart and brain and force the child to ask questions or to utter spontaneous exclamations, statements or commands.

When any form of the sentence bursts from the child because he has gained a new thought or emotion and feels the need for expression, the teacher may be sure that interest is at a white heat. The "psychological moment" has arrived in which effective teaching may be done. Unless this point of contact between teacher and pupil is secured, the work is usually mere lip-service, a smatter of terms with the soul left out.

**3. The Child's Equipment.** Prior to his first school life, the child has gained much intimate knowledge of the home relations and family ties. He knows the household routine and has decided preferences in matters of food, drink and clothing. He has learned games to play and the times of year when they are in favor. He knows something of the farm, the orchard, the workshop or whatever most interests his father and occupies his time.

If his home is in the country, probably he has raced after countless butterflies and has had some unpleasant experiences with bees and wasps. He may have seen snakes and toads cast their skins, and tadpoles develop into frogs. He has learned something of birds and their ways; has exulted in the power of wind and storm; has lazily wondered over the shifting clouds; has been thankful for bright stars and the silver moon that peeped into his darkened room at night. In various ways he has also learned something of authority, obedience and the rights of others. In fact, he has been a living interrogation point, with "What is it?", "Where is it?", "What is it for?" perpetually dropping from the tip of his tongue, and all because his mind was intensely wide-awake.

What has been the foundation for rapid development in the use of language before the child enters the school is natural, spontaneous and far too valuable to be pushed

aside by the formal routine that obtains in too many modern schoolrooms. When all is said and done, it is difficult to improve upon nature's plan for the development of her boys and girls, and the closer we teachers can keep to her methods of teaching, the more truly successful our work is sure to be.

**4. The Teacher's Part.** The child's mind being thus stored with bits of knowledge, it remains for the teacher to help him recall this knowledge and to add new information that will be properly related to the old. To expand and classify all this knowledge to make it ready for use when needed calls for the definite use of language as a means of expression.

"In every department of teaching begin with the known and proceed to the related unknown." Children will not long stand dumb as statues before a bright-faced, alert, sympathetic teacher even on the first day of school. Timidity will be banished by interest and sympathy, and all but the very shyest children will talk with a reasonable degree of freedom and facility. This, then, is the beginning of the school language work, the informal preparation for more definite teaching of new words and phrases.

At the outset, if the teacher is able to get the children to talk freely, she should be careful not to chill their efforts by many or harsh criticisms. The most successful teacher of language to young children is the one who, without embarrassing the speaker, is able to suggest the correct form when the pupil's language is inadequate, and to replace an incorrect idiom by a happier expression. Nothing should be done to repress the desire for expression. Every new word gained, every new sentence formed, is a distinct step gained in the use of oral language.

Things endowed with life and motion more readily gain the child's interest, hold his attention and call forth spontaneous expressions, because they awaken thought more vividly and freely. Toys, games and stories are second only in interest to these. The worth of any exercise is destroyed,



however valuable the material, unless there is motive for expression—a real motive which appeals to the children. Set and formal exercises, therefore, should be avoided.

**5. Every Lesson a Language Lesson.** With language, as with penmanship, many of the unsatisfactory results are directly due to the separation of language, as a study, from the other subjects of the school curriculum.

The truth is, every lesson of the day should be to the child a lesson in language. Every sentence used, yes, every word used by the teacher in her entire intercourse with her pupils should be a model which they may safely follow. This is all the more imperative from the fact that children who really love their teacher—as a majority of primary children do—are prone to copy her general mode of speech, her style of pronunciation, even her faults and peculiar mannerisms. Many children, too, come from homes wherein pure, refined English is seldom heard, and to these the teacher's example is all-important. For these reasons, she needs to be always on guard lest in this regard her own heedless habits lead her pupils astray.

**6. Language Related to Other Subjects.** Every new fact that the child learns calls for appropriate language in which to express it. It is a fundamental necessity, therefore, that his daily life in school shall be filled with real and interesting experiences, and that these experiences be closely related. Arithmetic, nature study, literature and constructive efforts furnish the means out of which these experiences may arise. Therefore, the teacher, when supplying the right words and sentences to express the new thoughts or emotions and their new relations, is giving a valuable lesson in oral language, as well as adding to the child's store of information in the various lines that the school routine calls for. And when any of these words or sentences are put into script or print for a child to read or copy, a lesson in written language is taught.

A written summary of the calendar work at the close of the month, for instance, written upon the board, would

supply material not only for an excellent reading lesson, but a language lesson, as well; and if the interest aroused is sufficient to lead the pupils to desire to give original written expression to any one of these experiences, the best motive is supplied for beginning written composition. The immediate result may be only a sentence, faulty and produced with difficulty, but the right relation has been established between thought and language form, between desire and effort.

**7. Undesirable Lessons and Their Correctives.** Lessons in oral language are daily given to the child, most informally, in the school playground, at home and when he is in the street. Indeed, the unconscious tuition of the street is one of the most difficult things that conscientious teachers of English have to overcome, because it is so varied and dramatic. The excited pantomime, the posters in flaming colors, the novel slang, obscenity and profanity, all these sink deep into the impressionable minds of primary children.

The natural corrective for all this is to make school more attractive than the street, and to bank up such a taste for better things as will overcome the corruption of bad examples. One very effective method of procedure is to read and tell many attractive stories to the children. Select stories that are full of dramatic power and of a character to awaken all desirable emotions, and see that your narrative is couched in clear, refined English, but direct and forcible enough to remain as a model.

**8 Oral Reproduction.** It is not enough to read or tell such stories to children. They should be early trained to give them back in the best language they can command.

For the pupil's first attempt, a short, but decidedly interesting story should be selected, told in an attractive manner by the teacher, and orally reproduced by a child or by several children. When the pupil hesitates, the particular thought or expression should be suggested by the teacher. The fables furnish excellent material at this point,

because of their brevity and forcefulness. Short repetition stories come next in importance, stories like *Little Red Hen* and *The Grains of Wheat*.

If the pupils have a real audience—as a pupil who was absent when the teacher told the tale, or another grade of children who themselves are preparing a story to tell in return—a true social atmosphere is created, and the teacher can train in oral English with much better result. She asks, "Will that be clear to children who have never heard the story?" Drill on the common mistakes in speech, as, "Who did it?" "She sat down," etc. This is infinitely more effective when there is a social motive for correctness back of it. To help in writing a "room story book," for which the best parts of children's feeble little attempts are selected by the teacher; to keep a simple little note-book record of how the plants, animals, and weather are changing, are much more reasonable activities involving writing as expression than the writing of sentences daily, just for the sake of writing.

At the next trial, something a little longer may be used. One child may be asked to start the telling of a story, and, when well started, another pupil may take up the narrative, then another and another, until the story is complete. This method holds the interest of the class, calls more pupils into the exercise, and, when questions are well and rapidly distributed, keeps all the members of the class alert and expectant.

When pupils adhere rigidly to the exact words of the book, which is not at all likely, try to secure more freedom. On the contrary, when pupils are inclined to use too much freedom, introducing slang or any less desirable forms than those in the original, encourage a closer adherence to the choicer words and phrases of the book.

**9. Similes and Metaphors.** To familiarize children of the primary grades with the use of picturesque terms, it is well for the teacher to make free use of easy similes and metaphors in both the formal and informal work of the school,

and to call attention to the "picture" words and phrases which occur in the reading lessons. This kind of language training should be commenced early in the first year and carried through all the grades, expanding the work and increasing the difficulties according to the advancement of the pupils.

It is far better to weave desirable figures of speech into the early blackboard reading lessons than to starve the child's imagination by forcing him to read endless bald, unadorned statements like "I see a cat," "I see a dog," "I see a hen." Suppose we try, instead, "See my white cat, Snowball. Snowball has a white fur coat. Has your cat a white fur coat? My Snowball has golden eyes. Has your cat golden eyes? Snowball likes me and I like Snowball." In either case, to adults the repetition is tiresome beyond expression, but children do not feel it in the second series of sentences because the language used is such as appeals to their imagination and fills their minds with pleasant images.

**10. Methods Illustrated.** Assuming that many of the primary reading lessons prepared by the teacher will be based upon various phases of nature study and familiar experiences of the child's life, a series of figurative sentences appropriate to such lessons during the first three years is here given. Interweave these and others of like character freely among the plainer sentences and see how much more rapidly the children will learn to express themselves in good English.

When these or similar sentences are introduced or found in reading lessons, let the pupils tell what they think is meant. Often ask, "What picture does that make you see?" "Read the sentence again. Now shut your eyes and tell me what picture comes." The novelty of the exercise lends additional interest and impressiveness to the lesson.

**11. Suggestive Exercises.** The following series of sentences may be appropriate for use:

This is our baby  
 Baby has laughing eyes.  
 Her cheeks are like roses.  
 Her hair is like sunshine.  
 What is her mouth like?  
 Her mouth is like a sweet little pink rosebud.

Little violet has come.  
 She has on a purple hood.  
 Sunshine kisses her modest little face.

Hear the little brook laugh and sing.  
 See how it dances over the pebbles.

Milkweed seeds travel far from home.  
 Sometimes they go by bird express.  
 Sometimes they ride on a friendly breeze.  
 Dandelion seeds and thistle seeds travel the same way.

The day is dying now.  
 Look at the sunset sky.  
 See the banners of red and gold  
 Soon it will be night.  
 Then the stars will blossom in the sky.

The long arms of the great elms reach across the roads in the park. Do you think the trees shake hands?  
 See how the people gather under the elms. The kindly trees shelter them from the sun. The gentle winds fan their hot faces.

#### MOTHER NATURE'S CARPET

It is the spring-time. Mother Nature's white fur rugs are worn out. Her floor is as bare as bare can be. Where will she get a new carpet?

"Let me sweep the floor," said March. "I will use my strong wind-broom."

April said: "I will make a carpet for the floor. It shall be of soft, green grass."

Then May said: "I will scatter dandelions over the green carpet. They are as yellow as gold. I will scatter blue violet over it, too."

What did June, sweet June, say?

"I will bring clovers and buttercups for Mother Nature's carpet. I will bring sweet perfume, too. The breath of my roses is the perfume. Who does not love the breath of June roses?"

And so Mother Nature got her new carpet, and June gave her rose perfume, too.

Before the third year has passed, the children will not find it difficult to understand and explain such expressions as "All winter long the winds rock the leaf cradles," "Beyond the purpling hill-tops I see a star," "Hummingbirds are jewels with flashing wings," "October is the month of painted leaves," and "March is spring's own trumpeter."

**12. Rhythm and Rhyme.** Children love both rhythm and rhyme, and imitate them from *Mother Goose* and other jingles. This tendency should be encouraged. The work in phonics aids here; reading aloud to the children poetry with marked rhythm and simple rhyme is another help. Let the children clap or mark the strong accents as they do in the music or in the gymnastic games. Let them give words that rhyme. Such work marks the beginning of appreciation and understanding of poetic forms. A first grade class composed the following poem with great delight, and used it in games:

#### THE FAIRIES

Fairies go.  
Skipping so.  
They sleep in the day;  
At night they play.

**13. Other Phases of Oral Reproduction.** After the class has become used to short reproductions, it will be well to select longer stories and to call upon different children to reproduce the various parts or sections of the story. For instance, in the story of *The Three Bears*, which is a prime favorite, call upon one child to tell how the bears chanced to go for a walk; another, of the coming of Golden Hair and her experience with the porridge; another, of her experience with the chairs, another, of the bedroom episode, and three others of the episodes after the bears return. This may be preceded or followed by an impromptu dramatization in which action takes the place of explanation, and the conversation is more or less original. The dramatic effort is a great stimulus to constructive imagination and to language

effort. Good pictures supply suggestive situations, and the primary teacher can do no better than to collect series of pictures illustrating favorite stock stories.

The next step would be to take some of the familiar Mother Goose rhymes for the reading lessons and then let each one be told in prose language by the pupils, following the plans previously stated. Some of the best for first use are *Lady Bug*; *Daffydodilly*; *Jack and Jill*; *Mary, Mary, Quite Contrary*; *Little Bo-Peep*, and *Little Boy Blue*.

Before the end of the second year, children will easily reproduce such stories as *The Little Red Hen*, *Little Red Riding Hood*, *Chicken Little*, *Cinderella*, *The Three Bears* and *Puss in Boots*.

*The Three Bears*, *Chicken Little*, *The Old Woman and Her Pig* and some others will be told easily in the last term of the first year, if the children are from American homes, where they hear and speak the English language only. The amount of repetition in these makes them easy to memorize, and when children deviate from the exact language it often adds a piquant flavor to the original tale.

On the contrary, Celia Thaxter's *Spring*, Tennyson's *Cradle Song*, Helen Hunt Jackson's *September or October's Bright Blue Weather* and the like are as beautiful as they are simple, and should never be subjected to the distortions that result when children are asked to give them in their own language. Real poems are too fine to be twisted out of shape by the garbled versions due to turning good poetry into bad prose. Memorized, they add materially to the child's mental pictures and to his stock of effective and beautiful language.

Such fables as *The Fox and the Grapes*, *The Lion and the Mouse*, *The Wind and the Sun*, *The Crow and the Pitcher*, and such stories as *How Patty Gave Thanks*, *The Morning-Glory Seed*, *The Little Fir Tree*, *The Five Peas in One Pod*, *Legend of the Cowslip* and *The Three Axes*, and, in the third and fourth year, such myths and legends as *Clytie*, *The*

*Blue-Eyed Grass, Narcissus, Pandora's Box, Rhoecus, Janus* are easy for primary children to reproduce orally.

The above are but suggestive types of the work to be done. The amount must depend upon the time allowed for specific language work, the natural ability of the children and the kind of training they receive outside of school.

The object of such exercises is (1) to secure fluency in the use of familiar language, (2) to teach new words and phrases, (3) to create a taste for purer English than that heard on the street and in the majority of homes, and (4) to teach pupils to think clearly when standing and to speak easily and without embarrassment.

The value of this kind of work is so great that it should be freely given in the first grade and continued through all the grades.

*Cautions.* (1) When the children have a real poem to read, no matter how simple, then have no original reproductions. A genuine poem is such because it contains a beautiful thought beautifully expressed, and the sentiment will be far better remembered if not separated from the language in which the author has clothed it. In such cases always have some portion—or the whole—recited *verbatim*, and, in the third year and onward, copied with absolute fidelity upon blackboard or paper.

(2) Teachers are not to conclude that all of one form of oral reproduction is to be given before another is introduced. Make one form familiar, then give another for the sake of variety, changing often from one to another.

**14 Technical Forms.** So far, the work has been based upon the assumption that language is the result of a need to express thoughts and emotions. The technical forms have not been discussed—and should not be, with primary children—but they must be attended to, nevertheless, and kept constantly in the teacher's mind until the pupils learn from long practice to use them correctly without being obliged to give thought to the matter. It is the teacher's business to eliminate from the language of the school all



slang and all ungrammatical expressions, of which *I seen, I done, 'aint, 'aint, haint, he has went, he don't, them things, those sort of things, I be* and many others are familiar, everyday types.

To weed out the objectionable language which is found in nearly every school requires unlimited patience, unceasing vigilance, a perfect example and much tact on the part of the teacher. It is, literally, "line upon line and precept upon precept, here a little and there a little," and this, too, all day and every day. Harsh criticisms or ridicule in any form should never be employed.

Usually the child does the best he can, and falls into errors of speech because knowledge of correct forms has not yet functioned into habit. When a slip of the tongue occurs and the child says, "I seen Frank," it is wiser, quietly to repeat, "I saw Frank," or let the account be finished and then say, "Charles, say, 'I saw Frank. He did it'", and in this way have all errors corrected. It is a long, hard task, but a kindly persistence will finally have its effect.

The various forms of the verbs *be, go, do, see, has* and other common, irregular verbs will cause much trouble, as will the various forms of pronouns. These must be learned from being called constantly into use, no technical explanations being possible at this time. The teacher will need to plan exercises in which troublesome forms may be freely used without having the appearance of being purposely introduced (see Section 16).

*Cautions.* (1) So far as possible, never let a child of the primary grades hear or see an incorrect form of language.

Through the law of primacy in experience, the first form tends to make such an impression upon the mind that the child is possessed of a strong tendency to follow the example given; and it is also true that in presenting an incorrect form the teacher intensifies a tendency already established. "False syntax" is already familiar and undesirable. It is the correct form that needs to be impressed; hence, the so-called "false syntax" should never be used before the pupils are old

enough to study grammar as a technical subject—and even then its use is of doubtful propriety.

(2) Be sure that all words used are understood by the pupil. Many teachers, in connection with the reading and spelling lessons, require in the primary—and the higher grades as well—that all new words be used in sentences of the child's own making. Such an exercise frequently leads to absurd mistakes and should not be used in the primary grades.

(3) As a rule, teachers are not sufficiently careful when teaching the words of literary selections, songs and poems. One child referred to memory gems as "memory jams." Another child sang, "Four hundred pussies waiting near," for "For hungry puss is waiting near," and when corrected by his mother refused to change, insisting that his teacher taught the song as he sang it. A boy changed the familiar proverb, "Wine is a mocker and strong drink is raging," into "God is a mocker and strong drink is ragtime," and declared that was what he had been taught. These are but a few of many illustrations that show the importance of securing on the part of the pupils a clear understanding of both the words and the meaning of whatever they are required to memorize.

**15. Historical Stories, Biographies and Journeys.** For pupils of the third grade a very interesting and valuable line of oral language teaching may be based upon interesting stories from history, especially stories of colonial children, children of Japan, of China, and Indian children. Stories of the childhood of famous men (Lincoln, for example) may be used in the same way. Journeys may be taken to the places and products in which children take interest. In all such exercises adhere to facts.

Children should also be taught to talk to outlines, following a consecutive order. These outlines may first be furnished by the teacher, with more or less help from the pupils, according to their ability. Later they should make and follow outlines in both oral and written exercises. Than this there is no more effective aid to consecutive thinking and expression.

16. **Language Games.** Personations of birds, insects, rodents and other animals, personations of flowers, celebrated trees, personations of natural or manufactured products; celebrated characters of history (generals, inventors, philanthropists, etc.); also, celebrated events in history can be used to good advantage. In all of these, the usual formula is "I am——," giving the distinguishing characteristics, and closing with "What is my name?"

These make good oral reviews in the various subjects and are fine exercises in oral language.

There is a game commonly called *Twenty Questions*, which is excellent for language drill in the third grade and above. Each of these questions must be such as can be answered by *yes* or *no*. The leader fixes his mind upon some one person, object or event. The first questions are, "Does it belong to the animal kingdom?" "Vegetable?" "Mineral?" This being settled, other questions are asked until the leader's thought is reached.

For the primary children, simple personations of familiar birds, flowers and animals are better. The rhyming word can also be used. The leader has some word in mind that is to be found out by the other pupils, for instance, a word that rhymes with *my*. The questions asked may be "Is it good to eat?" The leader replies, "No, it is not *pie*." "Is it what I see with?" "It is not *eye*." And so on, until some one asks, "Does it mean to weep?" "Yes, it is *cry*."

The following game, varied to suit the needs of the particular class, has been found to be very helpful. The questions, answers and action should be rapid and varied. Five minutes given occasionally to the game with the entire school gives practical help on the difficult verb forms, the expression and the action coming together, causing the right form to become automatic.

*Teacher:* Charles, you may *sit* in my large chair and see how straight the children sit. (Charles does so.) What is Charles doing, Emma?

*Emma:* He is *sitting* in your chair, Miss Blank.

*Teacher:* How do the children sit, Charles?

*Charles:* They *sit* straight, Miss Blank.

*Teacher:* You may take your seat, now. What did Charles do, Anna?

*Anna:* He *sat* in your chair, Miss Blank.

*Teacher:* Right. You may go to the door, Frank may go to the window (etc.). Tell what each one did.

*William:* Anna *went* to the door, Frank *went* to the window, etc.

**17. Oral Composition of Plays.** The youngest children in school should be given opportunities for oral dramatic composition. The interest in *playing* the thing is so great that the teacher may turn it to account in causing the children to compose in oral English the little drama to be played. For instance, after the teacher has told the story of *The Little Red Hen*, the children, in planning the play, should tell what each of the animals should say (the repetition in the tale makes this easy), who speaks first, and the like. The utmost simplicity should be adhered to, but, nevertheless, the words of the little drama should be contributed by the players themselves. Imitation of the teacher's words at this stage is to be expected, and is, for purposes of training, desirable.

**18. Language and Drawing.** Drawing should often be combined with words in a lesson to make the ideas more vivid to the child; also, to assist his memory when first he is attempting either oral or written reproductions. For example, the youngest children of the first grade may find it difficult to tell even so simple a thing as *The Old Woman Who Lived in a Shoe*. In such cases, a few outline drawings suggesting the chief objects or actors would make the reproduction an easy matter.

**19. Written Language.** The earliest lessons in written language are the recognition of the written or printed forms of familiar words, building these words with splints, lentils or alphabets, and copying the same words first on blackboards, and, later, on paper or slates. Paper without lines

is better for the beginner. (See *Pennmanship*, Vol. II, 156.) See the lessons on reading for details as to this work, the teaching of capital letters and punctuation, the writing of the child's name, home address, father's name, names of the days of the week and month, name of the school, etc.

The secret of success in teaching the correct use of capitals, punctuation, paragraphing, all that pertains to the forms of written language, may be found in the following rules:

(1) No incorrect form should appear in the teacher's own work or in what she puts before the pupil.

(2) No incorrect form in copied or original work by the pupil should be allowed to pass unnoticed or uncorrected.

(3) As before stated, criticisms should be made gently and impersonally. No child should ever be permitted to feel that it is himself rather than his work that is criticized.

(4) There should be endless repetition of the correct forms. Incorrect forms that occur in the pupil's work should be quickly erased and replaced by correct ones.

(5) No new form of written language should be attempted until the same thing has been given orally and so used until it is familiar to the child.

**20. Steps in Written Work.** All the first efforts of the child should be limited to some form of copying from correct models. At first, the exercise should not require more than the child's own name, owing to the difficulties he has with penmanship. As these difficulties are overcome slowly, the exercises must increase in length very gradually.

The second step may well be the written reproduction of one or more facts brought out in the nature study lessons. These reproductions should be answers to guiding questions placed up on the board. Here, again, the teacher must remember not to increase the number of questions beyond what the pupil can answer correctly and neatly in the time allowed. It is necessary to ward off discouragement and develop the child's confidence in this new line of endeavor.

The chief difficulty on the teacher's part will be to prepare the questions in such wise as to bring out in the answers the principal points in the order of their occurrence, so that

the reproduced story may have the same continuity as the original one. From the beginning, questions and answers appearing upon the blackboard should be written in paragraph form. The results in consciousness and imitation of copy will appear later. This is of much importance, as it is the simple beginning upon which a clear, lucid style depends.

To illustrate simplicity and grouping, the following questions are given. They may be used after the pupils have been made entirely familiar with the facts by oral lessons:

What is the color of your kitty? What is her coat made of? What is her name?

What does your kitty eat? How often do you feed her? What meat does she get for herself? What food does she like best?

How does your kitty's tongue feel? When does she use it like a spoon? When does she use it like a sponge? Why does kitty have sharp claws? When does she use her claws?

The questions pertain to three topics, each group forming a paragraph. The answers should also relate to three topics, and were they placed in written form they would be in three groups.

The answers, given in consecutive order, form the story desired. Note that the questions, in first, supply most of the words that will be needed in the answers, thus aiding the spelling as well as the construction of sentences. The number of questions and the degree of difficulty must be governed by the grade and the ability of the class and the time allowed for the work.

*Caution.* (1) No questions should be asked that the pupils cannot answer from knowledge previously acquired in oral lessons.

(2) The time devoted to a written exercise in language should not exceed twenty minutes, even for the third year pupils. For first year pupils, from ten to fifteen minutes, and for the second grade, from fifteen to twenty minutes, are the maximum limits. These exercises, at first, should

be written under the immediate, but not oppressive, supervision of the teacher. Later, they should be written without help of any kind.

(3) Teachers must remember to make the first questions very simple and limit them to three or four, gradually increasing the number to ten for the last part of the first year, fifteen for the second and twenty for the third year.

(4) When the answers require any difficult thinking, the questions must be reduced in number. If the questions require too much work for the time allowed, the pupils become discouraged and cease to try.

(5) Correlate the work carefully with spelling and penmanship, commending, according to the effort made, correctness of statements and neatness of work.

(6) Save the papers and use the stories in a subsequent reading lesson.

(7) Correct errors in spelling, capitalization, syllabication and punctuation in the next spelling period or in the next language period.

(8) Mark the errors, but do not tell the class who made the errors. Say, "I found so and so on this paper." Then read the sentence and call for corrections of (a) facts, (b) form. Often the one who made the error will be the first to correct it, the ear helping to detect what the eye had overlooked because of the struggle with the difficult written forms.

(9) Assign enough work to keep the quickest ones busy the full time, but do not require the weaker ones to do all of it. Better say, "I wish all the class to answer the first five (more or less) questions, and all who can may answer every one of them."

(10) Avoid stilted phraseology in the questions. Always use good English and keep to simple forms.

(11) The danger always is that the teacher will expect too much and give so much written work that the result is poor spelling, poor penmanship, errors of all kinds and general discouragement.

**21. Picture Lessons.** Pictures may, if desired, form the basis of many interesting and profitable lessons in oral language during the first year. In their study, the teacher's questions should be carefully framed so as to direct the order of the child's observation as well as expression, until a logical habit in each has been thoroughly established.

During the first months of school, the little people are prone to make use of fragments rather than of whole sentences. As diffidence wears off and their vocabulary increases they gradually acquire considerable fluency in the use of oral language. The element of continuity is still very weak and not to be trusted; hence, for all forms of written work, outline questions, as previously suggested, should be prepared according to the foregoing instructions, to serve as a guide for the work required.

When pictures are used for language lessons, always present those that are correct, interesting, suited to age of pupils, and not so crowded with details as to obscure the story the picture should tell. Practice in naming trains pupils to see the central thought or purpose of a picture, and will assist them later to describe effectively. Children, if left to themselves, are likely, for instance, to say, "I see some chickens, and a hen, and a pan, and a woman," whereas they must be helped to see and say, "I see a woman feeding the chickens. The food is in a pan, and she holds the pan in her hand." This latter power arises from seeing the central thought, and naming the picture *Feeding the Chickens*.

The full-page illustrations used in this volume are types of pictures suited to primary grades. They can be used for both language and reading lessons.

As before stated, oral lessons should precede the written ones all through the first three years, because of the mechanical difficulties attendant upon written language.

**22. Outline for Last Month of First Year.** Take Malbis's *Milk*, for example. The following questions may be used first in a conversational lesson, the answers given orally by the class, written upon the board as obtained, then used



later for a reading lesson. The answers may then be erased, leaving before the class as the basis of the written work the questions only.<sup>1</sup>

(a) THE QUESTIONS. (1) Name the picture.

(2) Give the little girl a name. What has she in her lap? What color are the lilacs? What shape? Where do they grow? Where do you think she got them?

(3) Why is she looking upward? What kind of weather is it? Why do you think so?

(4) Where have you seen lilacs?

(b) THE STORY (APPROXIMATE). (1) This little girl is Dorothy. Dorothy has some lilacs in her lap. Lilac blossoms are plume-shaped. Some lilac plumes are white. Some are purple. Lilacs grow on tall bushes. I think Dorothy's father gave her the lilacs.

(2) She is looking up to see her father pick them. I think it is warm weather. Dorothy has on a thin dress and is bareheaded.

(3) I have seen lilacs in the park.

*Cautions.* (1) Do not try to get the same name nor exactly the same conclusion from the various members of the class. The form is to serve as a guide, but not to restrict originality, save when the child's imagination is liable to run away with the facts.

(2) Notice that the questions are to be so framed as to include (a) the introduction, (b) the development, (c) the conclusion—the three necessary elements to every story.

(3) The last answer might be, "I have seen lilacs in the yard at home—out in the country—at my grandmother's," etc.

(4) In case a child voluntarily adds one or two sentences beyond what is required, do not discourage the effort, so long as what is added is consistent and properly related. Such additions seldom occur in the written work, prior to

<sup>1</sup> This exercise may be used for oral lesson earlier, but spelling and penmanship should be treated as the kind of written work and that based upon literature should be saved for the last of the year. Even then the picture should be well presented, the questions and details and the various points to observe carefully presented before the pupils begin to write the answers.



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the last part of the third year, but occur earlier and more frequently in the oral work of all the primary grades.

**23. Lesson for Latter Part of the Second Year.** (a) **BLACKBOARD OUTLINE.** Use the same picture. Study the picture carefully; see all you can. Play you are the little girl. Talk for her and tell what your name is.

Tell what you have in your lap. Tell where you got them. Tell where they grew. Tell how they came in your lap. Tell the color of your flowers. Tell what shape these blossoms are.

Tell why you are looking upward.

Tell why you are bareheaded and have on a thin dress. Tell what time of year it is.

Tell what you will do with these lilacs. Tell why you will do this.

Tell where else you have seen lilacs growing.

(b) **THE STORY (APPROXIMATE).** My name is Dorothy Quincy. I have some lilacs in my lap. My lilacs are purple. My father gave them to me. They grew on a tall bush on our lawn. Father dropped them into my lap. They look like purple plumes.

I am looking up to see him pick some more.

I am bareheaded and have on my white dress, because it is a warm day. It is the last part of May.

I shall give my lilacs to my grandmother. She loves them very much.

I used to see lilacs in grandmother's dooryard.

*Caution.* If the boys dislike to write this story, use for them another picture in which a boy, as the *Roman Flower Boy*, is the chief element. It is often well to use two pictures in this and higher grades, since more variety is thus secured and the corrections are less monotonous.

**24. Rhythm and Rhyme.** Train pupils in marking rhythm in the selections from their reading, as in *Hiawatha*, *Little White Lily*, etc. Let them, for instance, mark the strong and the weak pulses as they hear them, by clapping; others by chalk marks on the board; others by tapping with finger-tips on the desk, or by swaying of the body. All efforts

should be directed to make the children feel the rhythm and to express it. Little effort should be made to teach rhyme to young children. Accept it when offered, but do not strain for it. A class of children made up the following *May Day Verse*, one suggesting the rhythm, another a line, and so on.

## MAY DAY VERSE

A-Maying we go!  
A-Maying we go!  
We'll pick the sweet flowers  
In the early spring hours.

Another second grade class made up tree riddles in verse for Arbor Day. One was as follows:

"I am a tree so very tall  
That I am called the king of all.  
My leaves turn scarlet in the fall" (Oak)

**25. For the Third Grade.** (a) GENERAL INSTRUCTIONS. Use the same picture as before. This time let the children personate the lilacs and tell their story. Each teacher will necessarily vary the outline to draw out the facts that her own class has previously learned from a study of lilacs.

(b) THE STORY (APPROXIMATE). I am a lilac blossom. I grew on a tall, strong bush on the lawn. Do you see where I am? I am lying in little Dorothy's lap. Some of my sister blossoms are with me.

Little Dorothy loves us very much. Her father dropped us into her lap. Do you see her looking up for more? I think she wants her lap full of lilacs! The bush has more than enough to fill it.

Do you know lilac blossoms? We look like lovely plumes. The lilacs Dorothy has are purple. We have some cousins that are white.

You can smell our sweet breath a long way off. Dorothy's grandmother says she feels sure that spring has really come when she sees the lilacs.

Our mother bush is strong and hardy. She lives year after year out on the lawn. Her strong, tough roots hold her firmly in the ground. Her stems are strong and woody and are covered with a smooth, brown bark. In the month of April, her leaf buds swell and her green leaves come out. The blossoms do not come until May.

Dorothy will give most of her flowers to her grandmother. But I think some of the purple plumes will be turned into purple chains. Dorothy likes to make lilac chains. Do you?

*Cautions.* (1) Do not expect connected written stories until there has been a great deal of practice in telling stories orally. Fluency of speech comes only by long practice, and fluency with the pen is vastly more difficult; hence, teachers need to be patient with slow results.

(2) Very great care must be taken with the outlines, or the stories will never acquire the desired continuity and logical development according to the facts.

(3) Logical sequence of ideas, choice of words, correct spelling, capitalization, punctuation and syllabication will furnish more than enough difficulties for the primary grades. Even these, unless constantly worked with, will not be conquered for several years to come.

(4) When copying is required, it should always be in paragraphs, if the original is so arranged. From much copying, the form of the paragraph and its underlying ideas gradually become impressed, if the teacher wisely draws frequent attention to the groups of sentences, speaks of paragraphs by name, and shows why the groups are formed.

(5) Keep constantly in mind that all forms of constructive language should become familiar to the children first by means of oral language. The mind may then concentrate upon the form of construction without the attention being distracted by the requirements of spelling, punctuation and penmanship. This rule should be strictly followed, since, in written expression, one part of the work must be, to a great extent, automatic.



MICROCOPY RESOLUTION TEST CHART

ANSI AND ISO TEST CHART No. 2



RESOLUTION

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APPLIED IMAGE



(1) The outlines and suggestions given for the lessons on *Lilies* can be used as types of the work to be done when using other pictures as the basis of written lessons.

**26. Other Subjects for Lessons.** The same principles underlie lessons based upon flowers or other actual objects belonging to the world of nature; also to those based upon interesting manufactured articles, such as toys, textile fabrics, bird-houses, doll-houses, articles of furniture, geography topics in the third grade, and the like.

In each case, the illustration is to be carefully studied first-hand. Observation for ideas, then oral language for expression, and, last, expression by means of standard written forms is the invariable order to be followed.

**27. Language through Literature.** With older pupils, and with primary pupils to a limited degree, the subject of the written lesson may be intangible in form, derived from a fable, anecdote, story or poem told or read to the class. Then follows much practice in oral reproduction; later, a very brief written reproduction and, later still, a written longer reproduction with or without the help of questions, according to the age and advancement of the pupils.

Brief written reviews may also be required, in connection with the various oral lessons given.

**28. Written Reviews.** The following suggest what may be used during the last part of the first year of school, providing the proper lessons have been given and oral reviews previously required. Give one, two or three questions for one lesson.

(a) **BLACKBOARD OUTLINE.** *Mother Nature's House.* What is Mother Nature's house? What color is her house in spring and summer? What color is it in November? What color is it in winter?

How does Mother Nature sweep her house? What is her strongest broom? How does she wash her windows? How is her scrubbing done? How is her house dried and warmed?

(b) **THE STORY (APPROXIMATE).** The earth is Mother Nature's house. It is green in spring and summer. In November it is brown. In winter it is white.

Mother Nature sweeps her house with the winds. The March wind is her strongest broom. She washes her windows with April showers. The rains do her scrubbing. The sun dries and warms her house.

**29. For the Latter Part of Second Year.** (a) **BLACKBOARD OUTLINE** *Mother Nature's Carpets.* Does Mother Nature use the same carpet all the year? When is her carpet brown? When does she use a soft white carpet? How is this carpet made? When and how is this white carpet destroyed? What is the color of Mother Nature's spring carpet?

What flowers do you find in this pattern? How often is this flower-pattern changed? What flowers do you find

Mother Nature's August and September carpet? What are scattered all over her October carpet? Which of Mother Nature's carpets do girls like best? Which one do boys like best? Which of Mother Nature's carpets is used the longest without much change?

(b) **THE STORY (APPROXIMATE).** Mother Nature does not use one carpet all the year. Her carpet is brown in November. It is soft and white in winter. This white carpet is made by the snowflakes. The sun and the south wind spoil it in the spring. Mother Nature's spring carpet is green.

There are yellow dandelions and blue violets and some other flowers in the pattern. The pattern is changed every month from May to October. In August and September Mother Nature's carpet has asters and goldenrod and pansies in the pattern. The October carpet has bright leaves all over it. Most girls like the spring carpet the best, but some like the October carpet the most. Boys like Mother Nature's October carpet and her winter carpet. I think the winter carpet is used the longest.

*Caution* Remember that these answers will vary somewhat according to locality.

30. For the Last Part of the Third Year. (a) BLACKBOARD OUTLINE. *Mother Nature's Children.*

(1) Name some of Mother Nature's children.

(2) Which ones are masons? Which ones are drummers? Which ones are weavers? Which ones are fishermen? Which ones are divers? Which ones are carpenters? Which ones make honey?

(3) Which ones furnish music? Which ones run very fast? Which ones carry lanterns? Which ones are the tallest? Which ones have the prettiest clothing?

(4) Which ones give us sugar? Which one give us nuts? Which ones always have needles to spare? Which ones make paper houses?

(5) Which ones sleep several months of the year? When does Mother Nature awaken them?

(6) Which do you like most? Tell why.

(7) Which of Mother Nature's children give the most help to people?

(b) THE STORY (APPROXIMATE). (1) Horses, cows, sheep, birds, insects, reptiles, flowers, trees—all kinds of animals and all kinds of plants are Mother Nature's children.

(2) Barn swallows, bank swallows, swifts and beavers are masons. Partridges and woodpeckers are drummers. Orioles, vireos and a few other birds are weavers. Fish-hawks are fishermen. All kinds of ducks are divers. The beavers and woodpeckers are carpenters. The bees make honey.

(3) The birds furnish music. The rabbits, deer and squirrels can run very fast. The fireflies always carry lanterns. The trees are the tallest of the children. Flowers, birds and butterflies wear the prettiest clothes.

(4) Sugar cane, beet and maple trees give us sugar. The beech, walnut, oak, butternut, chestnut, almond and some other trees give us nuts. The pine tree has thousands of needles. Wasps make paper houses.

(5) Woodhucks, bears, frogs, toads, snakes and many plants sleep all winter. Mother Nature wakes all of them in the spring.



PLATE I  
 MUSEUM OF NATURAL HISTORY  
 DEPARTMENT OF AGRICULTURE  
 WASHINGTON, D. C.

Vertical text on the left edge of the page, possibly bleed-through from the reverse side. The text is mostly illegible but appears to contain a list of names or identifiers.

(6) I like to look at all of Mother Nature's children, but I don't want snakes and tigers and lions near me when they are loose. I like the pretty colors of some of Mother Nature's children, and it is fun to watch some of them move. I like to hear the birds sing, and I like to have some of the animals and birds show their love to me.

(7) I think cows and horses help people more than most of the children.

Review the calendar at the close of the month.

*Cautions.* (1) Keep in mind that similar reviews may be written, having all the questions limited to one topic, as trees, flowers, bees, butterflies, frogs, etc. The one above is general in character and should not be attempted until a great many specific reviews, both oral and written, have been given.

(2) Do not attempt to secure uniform answers. Encourage originality of expression so long as the work is correct in regard to facts and forms.

(3) Adapt the review questions to suit the locality as well as the ability of the pupils.

(4) Be extremely careful that all blackboard work is absolutely correct in all respects. Pupils do not need the teacher's example to teach them careless habits.

(5) The lessons written by the children, by the aid of blackboard outlines, usually result in a story having considerable continuity and a fair degree of smoothness in language and style. Occasionally, an exercise like the last is given, in which the purpose is chiefly to test the knowledge of the pupils. In such exercises, however, the law of association should be kept in mind and the questions should be arranged accordingly.

(6) These written exercises are preparing the way for more difficult work on composition writing in later years. Owing to the dread that pupils feel when the word *composition* is used, it is better to speak of written reviews, tests, and so on, and let the pupils really write compositions without thinking of doing so.

(7) To keep out errors and prevent discouragement, the motto must be "Slow and sure."

(8) Teach all pupils that accuracy and neatness always rank higher than speed. Speed and fluency will come from repetition and practice. The results will be more rapid as the difficulties of penmanship and mechanical forms are conquered.

(9) Let children "learn to do by doing;" give written exercises frequently, having every new form first presented and drilled upon orally.

(10) The written work as outlined will be too difficult to finish in the third grade and should be carried into the fourth and fifth grades, and possibly higher.

**31, Rhythm and Rhyme.** Continue simple exercises in rhythm and rhyme. Encourage the little folks to make rhymed couplets, to write longer compositions in rhythm without rhyme. Read to the children a great number of good poems within their comprehension, for education in appreciation and taste, and for the unconscious training in use of words, poetic expression, etc., afforded. After reading to the children sea poems entire or in part, by Barry Cornwall, Proctor and Longfellow, and having the class memorize parts, the children might try writing sea-verses. Among the verses composed by one class was the following:

THE SEA

The waves roll in  
 With an angry roar,  
 The sea-birds sail and cry;  
 The boat comes in  
 With its white wings spread  
 And all are warm and dry.

**32. Initials and Abbreviations.** Before the third year closes, the children should be taught how to write initial letters instead of full names, when desired. They should also be taught how to use the simpler forms of abbreviations, as those for the days of the week, months of the year and for their native country and state. Exercises on these

may be given to fill some of the periods for seat work. The learning of abbreviations should be extended into the fourth year and continued until all those in common use are mastered.

Abbreviations are uninteresting of themselves, hence difficult to learn. Furnish motives for their mastery, as the different forms in letter writing, street names, etc. In other words, teach as required. Matches, conducted like spelling matches, will aid in fixing habit, and cause the work to be done more cheerfully and easily.

*Caution.* It should not be forgotten that all the language forms begun in the primary grades need lifelong practice in order to keep them perfectly in mind on all occasions.

**33. Teaching English to Foreigners.** There are many children who enter our schools without even a speaking knowledge of the English language. These are seriously handicapped when classed with pupils who have never used or heard any other language than English.

With the children of foreign parentage, both ear and eye must have constant and careful training; with the strictly American children, the ear is already trained and a large spoken vocabulary is freely used, all of which proves that a double work must be done for the less fortunate pupils or they will remain hopelessly behind their classmates.

Added to the timidity that all children feel upon entering school, those who have little or no knowledge of our language are rendered painfully self-conscious because of the awkward prominence in which they are placed.

How to help such children learn English, in the shortest time possible, is the problem that confronts the teacher. The best method to follow is to help them, first, to become well acquainted with the other members of the class, since children always learn from children much faster than from adults. No notice of any sort should be taken of their awkwardness. Not a word, look or gesture should cause them to remember that they are different from the rest of the class.



All general directions for the school or for the class should be given in English, but, for some time, interpreted by some pupil that has a knowledge of both languages. If no such pupil is at hand, resort to the most expressive pantomime that can be invented. Teach the names of objects, names of actions, of qualities and properties of objects, by presenting the name as the object is handled and observed, or as the activity is required. Number, drawing, nature study, construction and games will furnish abundant objective material. Avoid confusion by proceeding slowly, and by repeating the exercises frequently, with spirit.

In a surprisingly short time the interpretations will not be necessary, unless a new pupil enters or a new form of instruction is introduced.

The utmost kindness and tact will be needed to win the full confidence of these little strangers and wear away their natural embarrassment. (The other children should be talked to privately and their friendly cooperation secured.) On the playground their tendency will be to withdraw from the others and spend the time talking together in their native language. This should quietly, tactfully but persistently be prevented. See that they are drawn into all the games and induced to participate in them. Thus the ear will get constant training, and the interest and excitement of the sport will lead them to talk English with some freedom, long before the more formal indoor exercises bring this result. Songs are valuable in the same connection. See *Songs*, pages 26-33.

The words that they will most quickly learn are the school commands, nouns that can be clearly illustrated by objects, and verbs of action. The latter may be illustrated perfectly by having the action performed each time one of these verbs is used. The order should be (1) the spoken word, (2) the action, (3) the written word. The latter should remain upon the board or special chart, to impress itself upon the eye and become familiar to all the class.

Other words must be used as needed, and the law of

association will help these children to become familiar with them. Frequent drills upon words and sounds that are found to be especially difficult should be given daily to the whole school, the teacher showing all the pupils just how to manage the vocal organs in order to enunciate properly.

Suppose certain children say *den* for *then*. All should be instructed to watch the teacher and do as she does. Place the tongue firmly against the lower edge of the upper teeth and hold it there while *then* is sounded. This will make it impossible to say *den* and will bring the correct pronunciation. Similar instruction must be given for other troublesome sounds. Much more drill in phonics is needed than for pupils from American homes. Much more practice in speaking English is necessary, and all legitimate means must be used to secure the needed amount.

Among the first phrases, they should learn such as form the social currency of polite society: *please, if you please, thank you, good-bye, good morning, good night, how do you do;* and to prevent the wrong use of *can*: *may I go, do, have, etc.*

Surround these foreign children with an atmosphere that is kind, sympathetic and courteous. Keep them doing things in response to English requests or commands. Keep them speaking and reading English. Have them build or write the words with the others and enter into all exercises that the others have; also provide special exercises.

This is the hardest language problem that confronts the teacher, but it has been successfully worked out, time and again, by the methods suggested. Each teacher should be able to add various devices of her own by which the work may be hastened. One teacher used to send frequent pleasant greetings (in English) to the parents. Another had each little poem memorized in school repeated at home. Another induced the children to play school at home, to show father and mother what we do at school.

*Cautions.* (1) The teacher confronted by this problem can do much towards solving it by comparing the elementary

sounds in the two languages and noticing those that are not common to both. The children will have difficulty in articulating only those sounds in the English not found in their own language, and it is to these that special attention should be given.

(2) Remember that the difficulty which these children have to overcome is physiological, so teach them how to use their vocal organs; then give frequent drills on the pronunciation of the difficult sounds. Simply pronouncing words to these pupils is time and effort wasted.

**34. Letter Writing.** Children are always intensely interested in sending and receiving letters; hence, even during the first year, something of letter writing may be introduced with pleasure and profit. A tiny letter to Santa Claus just before Christmas will make a pleasing beginning in this line. In this, the pupils should carefully copy the forms for opening and closing from models written on the board by the teacher. They should also copy the superscription for the envelope. The body of the letter should be original but very brief. Usually this part consists of but one or two short sentences, in which Santa Claus is told what present is most desired at Christmas time.

The next attempt may be deferred until February and consist of a little valentine to father or mother, or to both. If other letters are written during the year, one may be an invitation to a birthday party, and another a little note of thanks for some gift or favor. They should conform in all respects to the forms prescribed by correct usage, and be written with the utmost care. Much greater interest will be felt if correct note paper can be used and the letters sent through the regular postoffice or delivered by a special messenger.

In all these efforts, the writers should be permitted to ask how to make any letter, how to spell any word or how to use any mark of punctuation. Pride must be called in to secure correctness and neatness.

During the second and third years, the letters may be a

little longer and a little more frequent. From the third grade on, children should be encouraged to decide upon the number of topics to appear in the letter, and to keep to the paragraph scheme in correspondence as in other written exercises. "How many things are you planning to tell your friend?" "In what order will you arrange them?" "What will help you decide as to the order?" are questions that should be repeatedly asked when pupils begin to write friendly or social letters.

A letter to some dear friend or relative may be written after Christmas to tell of gifts. One may be written after a birthday or picnic, telling how the day was spent. Boys may write to some chum and describe a dog or some other pet animal, a new sled, a nutting party, a toboggan slide, etc. A letter may be written to a child in another part of the country. Almost every teacher is acquainted with some teacher living far enough away to make an interchange of letters a source of real educational value.

*Caution.* It is all important that the writer has something of vivid interest to himself that he may make the cause of his letter; therefore, study the children individually, to learn of their tastes and their personal belongings, before assigning the topics for letters. The teacher should never ask children to write letters or other exercises upon abstract themes.

**ORIGINAL WRITINGS.** Encourage originality. Have pupils read aloud to the class their little original productions. Urge them to write out their "made up" stories, and let them be read aloud to the class. The following is the best of a series of original fanciful explanations of the origin of the common flowers—dandelion, violet, etc. It is selected because it was written by a child who developed power and ability in written language through writing as just suggested:

#### THE FIRST DANDELION!

The beautiful god Balder was always smiling. The little elves used to gather together and watch his sweet smile. They were glad of it.

<sup>1</sup> Florence Reel, School of Education, University of Chicago, C. I. 17.

When Balder died, his smile left him. Odin kept it, for it was very precious. The elves were sad, for they missed it.

One day they thought of a plan. They went to Odin and said, "Please give us a piece of Balder's smile. We only ask for a tiny corner of it. We would be so happy to have it."

"But how could you carry it, you funny little men?" asked Odin.

"O, we will carry it in our hands," they replied. Odin thought they were so cute that he snipped off a little scrap with his gold scissors and gave it to them. How they laughed!

The elves kept their treasure down in the earth and looked at it every day. One day when it was spring on the earth, one of the little elves said, "We are selfish to keep Balder's smile down here. The people on earth love his smile, too." So they gave the smile power to push its way up through the rocks and become a flower. We call Balder's smile the *dandelion*.

**35. Memorizing Selections.** To store the memory of the pupils with brief extracts from choice literature is one of the highest services that the teacher renders, since these gems help to form a taste for pure literature and impart valuable lessons in right feeling, right thinking and right conduct, lessons which will remain with the learner long after his school days are ended.

The selections for primary grades may be in verse or prose, but they should always be brief and chosen for beauty of language as well as for their ethical value. To teach the name of the author in connection with the selection is to assist the pupil later in the study of literature. These selections are of practical value in enriching the vocabulary and widening the field of conversation. A teacher in these days need not be troubled to find suitable quotations for any grade. For example, the best series of school readers abound in them, and many compilations are to be found. The Psalms and Proverbs of the Old Testament contain some of the most valuable thoughts for school use to be found in any literature, and have the additional advantage of being clothed in simple language, full of dignity and impressiveness.

The work with quotations should be extended in all grades to include the memorizing of beautiful and appropriate poems. For use in the primary rooms the poems

should be musical and present pictures in figures of speech easy to comprehend. The prevailing sentiment should vary, being sometimes tenderly affectionate, sometimes in parts grave almost to sadness, but often playful and joyous from the beginning to the end. The poems should be suited to the season or the occasion, often rounding out some special lesson.

The works of Longfellow, Whittier, Holmes, Alice and Phoebe Cary, Lucy Larcom, Helen Hunt Jackson, Celia Thaxter, Eugene Field, James Whitecomb Riley, Margaret E. Sangster, Robert Louis Stevenson, George MacDonald, and many others that we have not space to enumerate, are full of poems well worth memorizing. But all these may not be accessible to teachers who are away from the great library centers; hence, we again suggest turning to the leading educational journals for help.

There are also several small volumes of poems compiled for primary children, the selections being carefully chosen for their interest, value and adaptation to the season of the year or the grade of school. Among the best of these are *Songs of the Tree-Top and Meadow* (Public School Publishing Company, Bloomington, Ill.), and *Graded Memory Selections* (Educational Publishing Company, Chicago).

*St. Nicholas* and other magazines for children are constantly presenting poems that are new and charming, both in substance and in form. In fact, there is really "an embarrassment of riches" in this field, and it remains to the teacher to cull those really worth while for her pupils to memorize.

*Cautions.* (1) Teach at least one new poem each month, reviewing one or more each day.

(2) Teach with the utmost care the correct pronunciation of words and the proper use of inflections and emphasis, so as to bring out the proper meaning correctly and sympathetically, with clear tones and distinct utterance.

(3) The most of this teaching can be done by means of concert work, but individual pupils should be called upon daily to recite a stanza or an entire poem.

4) Long poems are not satisfactory for primary children to memorize, although they greatly enjoy hearing a long poem read, particularly if it contains a story they can understand.

**36. Conclusion.** No special text-book on language is needed for the use of primary pupils. Teachers should have several good grammars at hand for reference, but should be so familiar with the subject as to make frequent reference unnecessary.

During the first two years, no separate period is needed for either oral or written language, provided the teacher keeps in mind the various necessary phases of her work. Otherwise, incidental teaching is a failure. The oral language is a necessary part of every school exercise, both formal and informal. The small amount of written work required may be done in some of the periods allotted to seat work. Slates and pencils, bla kboard and crayons should be used alternately in order that change of position and change for the different sets of muscles used may be obtained.

In the third year, and beyond, the greater part of the oral language work continues as a part of the other school exercises. A separate period is needed for the written work the technical forms being more numerous and difficult and the exercises of greater length.

Each method of teaching language has its ardent devotees, and it is seldom that a method is projected that is wholly without merit. Some few of the many have numerous excellent points to commend them. However, it remains true that as long as children, localities and environment differ as they do to-day, no one method will be able to meet all the requirements made by these differences.

**37. Aids.** There are numerous grammars and language books on the market, many of which are too well known to need mention here.

Among the later ones published, in which are found helpful suggestions for teaching language chiefly for pupils beyond the third grade, are the following:

*Language Lessons from Literature, Book One.* Cooley. Houghton, Mifflin & Co.

*Language Exercises.* Metcalf & Bright. American Book Company.

*Everyday English, Book One.* Rankin. Educational Publishing Company.

*Elements of Composition and Grammar.* Southworth & Goddard. Benj. H. Sanborn & Co., Chicago.

### TEST QUESTIONS

1. Of the children living in the country and those living in the city, which do you think are the better prepared for language work when they enter school? Give your reasons for your answer.
2. What mental powers are trained by requiring pupils to reproduce stories that are told or read to them? Are there any dangers for the teacher to guard against in such an exercise? If so, what are they?
3. What do you understand by "every lesson a language lesson" (1) as it applies to the teacher? (2) as it applies to the pupils?
4. Why should similes and metaphors be taught in primary grades? What figures of speech are frequently used too much in these grades?
5. What do you expect your pupils to gain from memorizing short poems and other selections of choice literature? How will you teach these lessons so as to secure the desired results?
6. How can the written exercises in other subjects be made to assist the work in language? How do these exercises often hinder the work in language?
7. What do pupils gain from copying stanzas of poetry and short paragraphs from selections of prose? What must the teacher do to have them derive the greatest benefit from this exercise?
8. To what extent should letter writing be taught in the third grade? Outline a lesson for beginning this work.



9. Why are children so prone to use the incorrect language learned at home and on the playground, instead of the correct forms learned at school? How can this tendency be lessened?

10. Is it wise to have pupils criticise one another's language? Why?

## CHAPTER SIX

### STORY-TELLING, DRAMATIZATION, GAMES, PLAYS AND SONGS

#### I. STORY-TELLING

**1. Introductory Statement.** All of the greatest teachers and leaders have used the story as an effective means of imparting instruction, molding thought and influencing conduct. Notice in the stirring public address of a gifted platform speaker how many stories are introduced and how they are used to compel attention, stir sentiment and arouse desired emotions. The story has been much more influential in lifting the human race to a higher plane of thinking and acting than the essay or the argumentative presentation of truth.

Great stories may be in the form of drama, romance or poetry, but they are always concerned with human experience and they embody in a concrete way some of the deep lessons of life. Stories serve as a great moral influence, because they stir the feelings and arouse the desire to imitate the admirable and to shun the hateful. Lectures and direct admonition are apt to leave the hearers cold or resentful, whereas the story, being impersonal, puts the listeners in a receptive attitude, with the result that they are more likely to be touched and influenced. The appeal of the story is primarily to the heart, not the intellect. Children of all ages, as well as grown people, are subject to the charm of a good story, and for this reason story-telling should form a part of the school exercises through all the grades and even in the high school.

**2. Special Value of Story-Telling.** The question is often asked, "What value does the story *told* carry with it which does not attend the *individual reading* of the same story?" From the standpoint of the primary teacher the answer is simple. No matter how rapid progress may be in the mastery of written and printed symbols, children are for a long time handicapped

in the matter of independent reading. Although there has been great advance made in the quality of the reading matter put into first and second readers, at best the finest flavor of a classic is lost in the attempt to reduce it to sufficiently simple form for early reading. With most children their power to read is for a long time far behind their literary taste and appreciation. Even after a fair degree of ability in reading is attained, story-telling has its own important uses and value. The teacher who knows well her class and its needs will select the stories to be told with a finer discrimination than any collector or publisher can possibly show. In almost every collection there are some stories one wishes had not been included, or one fails to find in a form accessible to the children—some especially fine story which is just the one most needed or desired at a given time. The one who commands the story-teller's art can give what she wants, when she wants it, and in the particular version or literary form which she considers finest and best. The personality of the one telling the story becomes a new element which may, and should, give added color, warmth and emotional effect to the story itself—not by reason of any remarks, interjections or conscious dramatic style, but by her own enjoyment and appreciation displayed in voice and play of facial expression.

The superior taste and knowledge of the story-teller will lead the children into paths which they would never enter alone. A shelf of good books in the room, with freedom given the children to help themselves, is an excellent thing, but it is not sufficient. They should be led on and on, by oral rendering, from Mother Goose and the simplest nursery tales to the great cycles of hero tales, such as the stories of the Odyssey, King Arthur and Siegfried; and they should be made acquainted in like manner with such writers as Andersen, Lewis Carroll, Kipling, George MacDonald, King ley, Hawthorne and Mrs. Richards. This can be done most successfully for all children, the slow and less favored as well as the most intelligent, by introducing them through a well-balanced course in story-telling throughout the grades, administered by

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enthusiastic teachers who have prepared themselves for this interesting department of work.

Story-telling has a social value worth noting. A good story, well told, serves to weld the separate small units of a class into one whole, having for the time being a common attitude, ideal or purpose. In the entire class there may be aroused a feeling of courage, a desire for service, a noble ambition; or, there may result merely a pervading good humor and tranquillity which goes over into the next work to be done. The aim of the story-teller should be for this totality of result, and it can only be accomplished by subordinating the teaching of English and all lesser aims, even that of the ethical lesson, to the one great purpose of full enjoyment *together* of a fine story.

**3. How to Select Stories for Telling.** We have today a wealth of material from which to select; and let us remember that the old stories which satisfied the imagination and fed the spirit of the human race in its infancy are the best suited to the young of all races and all times. This old material is in the form of folk and fairy tales, myths, fables, legends, rhymes and ballads. There has been a process of natural selection going on, by which the coarse and brutal have largely been eliminated and those embodying universal truth and appealing to modern standards have survived. In the repeated telling and re-telling, these old tales have also been polished in form, so that from the standpoint of perfection of finish many of them are well-nigh impossible to imitate.

The individual teacher will wish, of course, still further to discriminate and choose for her own class. A story which would be perfectly safe to use with a single child of a certain temperament might be entirely unsuited for class use. It is a safe course to reject for class use in primary grades all tales dealing with horrors in situation and incident. By this it is not meant to recommend the substitution of namby-pamby, diluted, doctored versions, which eliminate every detail of plot by which poetic justice is wrought and the guilty brought

to punishment. So to modify one of these old stories is to strip it of nearly every shred of moral and literary worth.

**4. Some Characteristics of a Good Story.** There are certain essentials of the good short story for adults which are also essentials of the good story for children. There is usually a character of preeminent interest who enlists our sympathy at once and holds it to the end. The introduction should be very brief, the well-written story taking the hearers almost immediately into the heart of things. The story must have action; the effect is stronger if there is direct discourse, so that the exact scene is clearly depicted before us. There must be a plot with a well-defined climax and a satisfying ending. For children, this ending, to be satisfying, must be happy; the characters that have engaged their interest must "live happily ever after." There should be very little description, just enough to make the pictures vivid. All of these features will not be found in every good story, but it is impossible to leave out several of the characteristics named without ruining the tale.

**FOLK-TALES AS MODELS.** Many of the old favorites among the nursery classics will survive a rigid application of these tests. Apply the above requirements to *Cinderella*, *The Three Bears*, *Sleeping Beauty*, *Beauty and the Beast*, *Snow-White* and *One Eye, Two Eyes, Three Eyes*, and see how perfectly these stories come up to the standard set.

Although the moral is not explicit in the genuine folk-tale, the best of them are nevertheless moral in effect, because the good is always made beautiful and attractive, while evil is represented as ugly and hateful. The good is always thoroughly good, and the bad thoroughly bad; there is no inner debate or confusion in the child's mind as to where to place his sympathy, and in the end right always triumphs over wrong—light over darkness, love over hate. The right use of stories tends to influence children to love and admire the good and to hate what is evil. Is not this the soul of the moral law?

We must not always be thinking of character-building, however, in selecting our stories, unless the ability to enjoy a



"SOMEBODY HAS BEEN SLEEPING IN MY BED, AND HERE SHE IS!"  
From "The Three Bears"

Vertical text on the left edge of the page, possibly bleed-through from the reverse side. The text is mostly illegible but appears to contain a list of items or a table of contents.

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hearty laugh be included in that term. Probably the thing most needed in the average schoolroom is a mixture of nonsense and pure fun with the more serious purpose. Mother Goose fills this need in the kindergarten and first grade, but by the time the third grade is reached there is, as a rule, very little of the humorous element introduced into the story hour. Many of the folk-tales are full of rich humor, and they should be used to evoke a hearty laugh, sure to be enjoyed by teacher and children together. Such stories as *The Golden Goose*, *Clever Elsa*, *Lazy Jack*, *The Musicians of Bremen*, *Epaminondas and His Auntie*, *The Cat and the Parrot*, are calculated to amuse and entertain children from six to eight years of age, while for third grade some of the "Uncle Remus" stories, Kipling's *Just-So Stories*, parts of *Pinocchio*, *Alice In Wonderland*, and *The Wonderful Wizard of Oz*, will serve to furnish humorous stories of a high type.

The interest in fairy stories is believed by competent students of childhood to culminate at about the age of seven years. This would indicate that there should be a large use of such stories in the first and second grades. The term *fairy story* is here used in its broad sense, and includes folk-tales such as those mentioned on page 166. There are few really good modern fairy stories. A few modern fanciful tales are mentioned in the graded list on page 197.

**REALISTIC STORIES.** Even during the period just mentioned, many children begin to crave the true story. A few children never care for fairy stories, and others soon outgrow them. These children begin to ask, "Is it a true story?" So, even in the first grade some realistic stories are needed, and there is an increasing demand for this type as the children advance. By the realistic story is meant the kind which is either really true or easily within the range of probability, having no supernatural element. Such stories need not be commonplace, though they may deal with the ordinary events of human experience. It is a mistake to suppose that children are interested only in the affairs of children. They are fascinated by selected incidents in the lives of great men and



women; thus, we conclude that the story should be the beginning of interest in history.

Since we are dealing here with the question of story-telling and not with the whole topic of literature for the primary school, it may be well to state that the amount of time and effort necessary to master a story for oral rendering should not be expended on any but the very best of their kind. Naturally, then, in the realistic and historical type one would select the more picturesque, heroic and romantic features, and would cast these incidents in good literary form. "The Little Hero of Harlem," found in many readers and in Miss Poulsson's *The Child's World*, and "Dora, the Little Girl of the Lighthouse," in *Boston Collection of Kindergarten Stories*, are good examples of the realistic story. Many others of this type may be found in Laura Richards' *Five Minute Stories*, in *Fifty Famous Stories Retold*, by James Baldwin, and in Mara Pratt's *Colonial Children*. Of course there are no finer stories of this class than those wonderful ones found in the historical books of the Old Testament. These stories, unsurpassed in interest, in beauty of language and in ethical worth, should not be overlooked in any school where it would be permissible to use them.

**MYTHS.** In courses of study myths are frequently called for, but little thought is given to the question whether these versions are unobjectionable. No class of stories needs more careful sifting and recasting than stories of myths before they are ready for telling to children. Those that contain the most that is human and the least of the supernatural are best to use with the younger children, unless we frankly convert them into wonder tales, as Hawthorne has done in *A Wonder Book* and *Tanglewood Tales*. Certain it is that children do not like the characters in whom they have become deeply interested to appear suddenly in the form of sun-gods or mist-wraiths or moon-maidens. Their imagination will admit of any amount of strange and impossible events, but they want the characters in their stories to be *real* people and *real* fairies and *real* giants; they don't want them to be disguised heavenly bodies or forces of nature.

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**NATURE STORIES.** Most children have a native interest in animals, and they listen eagerly to stories about them. Plant life interests them in a measure, though this is a taste which generally requires cultivation. There are so many truly marvelous things going on all the time in the world of nature that there is no excuse for fiction which represents it as a science. Avoid the use of stories in which animal and bird are made to appear almost human in intelligence and in feeling, but choose those calculated to acquaint children with the real habits and characteristics of these creatures.

**5. Method in Story-Telling.** Some people are naturally gifted as story-tellers. Almost every neighborhood has some untutored man or woman who is really proficient in this line and who can always command an audience. One can learn much by watching and listening to such a native genius. It will be noticed that a person with this gift always seems to enjoy his own story, no matter how many scores of times it may have been repeated—often to the same audience. There is always the little chuckle or laughing glance at a humorous turn and a manner of taking the hearers into his confidence, looking from one to another for appreciation or confirmation of different points. As a rule, the native story-teller is not at all dramatic in the sense of trying to impersonate the characters in the story; he is dramatic only in painting vividly the scenes, employing such art in narration as to make the characters live and move before our eyes, and in such use of varied intonation and expression as shall serve to arouse the appropriate feeling in the listeners.

Any one can learn to tell a story acceptably and entertainingly. It is largely a matter of practice, but a few general directions may aid in self-improvement.

For the novice, it is quite as essential that she should like the story which she attempts to tell as that she should choose those which the children are quite sure to like. It is doubtful if the most gifted story-teller can render well a story he does not care for. If you think fairy stories are silly, do not try to tell them. Study the finest examples and try to get a

different point of view yourself before you attempt to give pleasure to others.

The shortest stories may not be the easiest for the novice to master and present in a delightful way. Fables are the shortest of stories, but they are not the easiest for most people to tell pleasingly. They are too much like anecdotes in which if we forget a point right at a given place, or fail to make it sharp and clear, the whole thing falls flat. Many beginners in the art find a story of the accumulative kind, such as *Chicken Little*, *Henny Penny* or *The Mouse That Lost Its Tail*, the easiest to tell. The organization or plot is of a simple sort and easy to retain in mind; there is much repetition and the narrative moves on, as its name implies, almost of its own accumulative force. Stories of this type are especially loved by young children, and a number of them should be told in the first grade. Of course a teacher of older children attempting story-telling for the first time would have to begin with a different type of story, but preferably it should be short and be simple in organization.

Having selected a favorite story, prepare a skeleton outline and try to determine where in it the climax should be placed. Notice also what seem to be essential details which if omitted would affect important developments later. For instance, in *Beauty and the Beast*, Beauty's request that her father bring her a rose, while seeming at first glance a minor detail, is in reality an important turning point in the story. Examine carefully to see by what bold strokes the characters are made to stand out in their true colors. Any beautiful or noble action, or any mean and hateful one, must be made the most of in the telling, one's manner going far to stamp the conduct as good or evil. Do not be sentimental over the hero or heroine. Let the behavior and appearance of the characters as portrayed denote their nobility and loveliness; do not try to impress these by your own comments of approval and admiration.

After this critical examination, read the story a number of times, then take the outline and try to see the whole in acts

and scenes, as if the events were occurring before your eyes. Fill these scenes out mentally with as much detail as possible, always trying to visualize. Only by clear inward seeing and vivid mental picturing, can one make others see the scenes and hear the spoken words of the characters. Next, go over the story again to fix in mind, and get ready use of, any especially striking or effective phraseology or any rhymes or oft-repeated expressions. And, last of all, tell the story aloud to any one who will listen, or, failing in a rehearsal audience, tell it aloud before an imaginary one. It will not always be necessary to take this last step. As one gains in assurance and in skill, the thorough preparatory study of the story will enable one to give it at once to the more inspiring, real audience of eager children.

Any more exact memorization of stories than the method indicated is of questionable value. Some professional story-tellers make a practice of memorizing stories of a certain type, but the average teacher finds exact memorization a stumbling block rather than an aid. She is oppressed by the fear of forgetting, and ease and fluency are likely to be lost.

**6. Type of Story and Outline.** An excellent story which will illustrate concretely some of the principles outlined above is called, for sake of brevity, *One Eye, Two Eyes, Three Eyes*, but by the author was named—

LITTLE ONE EYE, LITTLE TWO EYES, AND LITTLE THREE EYES

There was a woman who had three daughters, the eldest of whom was called Little One Eye, because she had only one eye in the middle of her forehead; the second, Little Two Eyes, because she had two eyes like other people; and the youngest, Little Three Eyes, because she had three eyes, one of them being in the middle of the forehead. But because Little Two Eyes looked no different from other people, her sisters and mother could not hear her. They said, "You with your two eyes are no better than anybody else; you do not belong to us." They knocked her about, and gave her shabby clothes and food which was left over from their own meals; in short, they vexed her whenever they could.

It happened that Little Two Eyes had to go out into the field to look after the goat; but she was still quite hungry, because her sisters had given her so little to eat. She sat down on a hillock and began to cry, and cried so much that two little streams ran down out of each eye. And

a little girl sitting on the ground in her sorrow, a woman stood near her, who asked, "Little Two Eyes, why do you cry?"

Little Two Eyes answered, "He— I need not cry. Because I have two eyes, like other people, my fate— and my mother cannot bear me;



"LITTLE TWO EYES, WHY DO YOU CRY?"

Little Two Eyes answered, "He— I need not cry. Because I have two eyes, like other people, my fate— and my mother cannot bear me;

Only a little girl, and I will have to live, my poor eyes, and I will be very hungry, and I will have to live ever being hungry more.

"That's great, said;  
Little Two Eyes, rise,"

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and a neatly laid table will stand before you with the most delicious food on it, so that you can eat as much as you like. And when you are finished and do not want the table any more, only say,

'Little goat, bleat;  
Little table, away,'

and it will all disappear before your eyes." Then the wise woman went out of sight.

Little Two Eyes thought, "I must try directly if it is true what she has said, for I am much too hungry to wait." So she said,

"Little goat, bleat;  
Little table, rise;"

and scarcely had she uttered the words when there stood before her a little table, covered with a white cloth, on which was laid a plate, knife and fork, and silver spoon. The most delicious food was there also, and smoking hot, as if just come from the kitchen. Then Little Two Eyes said the shortest grace that she knew, "Lord God, be our Guest at all times—Amen," began to eat, and found it very good. And when she had had enough, she said as the wise woman had taught her,

"Little goat, bleat;  
Little table, away."

In an instant the little table, and all that stood on it, had disappeared again. "That is a beautiful, easy way of house-keeping," thought Little Two Eyes, and was quite happy and merry.

In the evening, when she came home with her goat, she found a little leather dish with food, which her sisters had put aside for her, but she did not touch anything—she had no need. On the next day she went out again with her goat, and let the few crumbs that were given her remain on the ground. The first time and the second time the sisters took no notice; but when the same thing happened every day, they remarked it, and said, "All is not right with Little Two Eyes; she always leaves her food, and she will formerly take care to eat up everything that was given her, she must have found other ways of dining."

In order to discover the truth, they resolved that Little One Eye should go with Little Two Eyes when she drove the goat into the meadow, to see what she did there, and whether anybody brought her anything to eat and drink. So when Little Two Eyes set out again, Little One Eye went to her and said, "I will go with you into the field, and see that the goat is taken proper care of, and driven to good pasture."

But Little Two Eyes saw what Little One Eye had in her mind, and she said to her, "I am just going to the field with the goat, and I will let you go with me; I will give you something." Little One Eye, of course, being used to her usual walk and from the heat of the sun, and Little Two Eyes

kept on singing, "Are you awake, Little One Eye? Are you asleep, Little One Eye?" Then Little One Eye shut her one eye and fell asleep. And when Little Two Eyes saw that Little One Eye was fast asleep, and could not betray anything, she said,

"Little goat, bleat;  
Little table, rise,"

and sat at her table, and ate and drank till she was satisfied; then she called out again,

"Little goat, bleat;  
Little table, away,"

and instantly everything disappeared.

Little Two Eyes now woke Little One Eye, and said, "Little One Eye, you pretend to watch, and fall asleep over it, and in the meantime the goat could have run all over the world; come, we will go home." Then they went home, and Little Two Eyes let her little dish again stand untouched; and Little One Eye, who could not tell the mother why her sister would not eat, and, as an excuse, "Oh, I fell asleep out there."

The next day when she said to Little Three Eyes, "This time you shall go and see if Little Two Eyes eats out-of-doors, and if anyone brings her food and drink, for she must eat and drink secretly."

Then Little Three Eyes went to Little Two Eyes, and said, "I will go with you and see whether the goat is taken proper care of, and driven to good pasture." But Little Two Eyes saw what Little Three Eyes had in her mind, and drove the goat into long grass, and said as before, "We will sit down here, Little Three Eyes; I will amaze you something." Little Three Eyes treated herself, being tired from the walk and the heat of the sun, and Little Two Eyes began in the same song again, and sang, "Are you awake, Little Three Eye?" But instead of singing then, as she should, "Are you asleep, Little Three Eyes?" she sang, through carelessness, "Are you asleep, Little Two Eyes?" and went on singing, "Are you awake, Little Three Eyes? Are you asleep, Little Two Eyes?" So the two eyes of Little Three Eyes fell asleep, but the third did not go to sleep, because it was not spoken to by the verse. Little Three Eyes, to be sure, shut it, and made believe to go to sleep, but only through cunning; for she winked with it, and could see everything quite well. And when Little Two Eyes thought that Little Three Eyes was fast asleep, she said her little sentence,

"Little goat, bleat;  
Little table, rise,"

ate and drank heartily, and then told the little table to go away again:

"Little goat, bleat;  
Little table, away."

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But Little Three Eyes had seen everything. Then Little Two Eyes came to her, woke her, and said, "Ah! Little Three Eyes, have you been asleep? You keep watch well. Come, we will go home." And when they got home, Little Two Eyes again did not eat, and Little Three Eyes said to the mother, "I know why the proud thing does not eat: when she says to the goat out there,

'Little goat, bleat;  
Little table, rise,'

there stands a table before her, which is covered with the very best food, much better than we have here; and when she is satisfied, she says,

'Little goat, bleat;  
Little table, away,'

and everything is gone again; I have seen it all exactly. She put two of my eyes to sleep with her little verse, but the one on my forehead luckily remained awake."

Then the envious mother cried out, "Shall she be better off than we are?" fetched a butcher's knife and stuck it into the goat's heart, so that it fell down dead.

When Little Two Eyes saw that, she went out full of grief, seated herself on a hillock, and wept bitter tears. All at once the wise woman stood near her again, and said, "Little Two Eyes, why do you cry?"

"Shall I not cry?" answered she. "The goat who every day, when I said your little verse, laid the table so beautifully has been killed by my mother; now I must suffer hunger and thirst again."

The wise woman said, "Little Two Eyes, I will give you some good advice: beg your sisters to give you the heart of the murdered goat, and bury it in the ground before the house door, and it will turn out lucky for you." Then she disappeared, and Little Two Eyes went home and said to her sisters, "Dear sisters, give me some part of my goat; I don't ask for anything good, only give me the heart."

Then they laughed, and said, "You can have that, if you do not want anything else." Little Two Eyes took the heart, and buried it quietly in the evening before the house door, after the advice of the wise woman.

Next morning, when the sisters woke and went to the house door together, there stood a most wonderful, splendid tree, with leaves of silver, and fruit of gold hanging between them. Nothing more beautiful or charming could be seen in the wide world. But they did not know how the tree had come there in the night. Little Two Eyes alone noticed that it had grown out of the heart of the goat, for it stood just where she had buried it in the ground.

Then the mother said to Little One Eye, "Climb up, my child, and gather us some fruit from the tree."



Little One Eye climbed up, but when she wanted to seize a golden apple, the branch sprang out of her hand. This happened every time, so that she could not gather a single apple, though she tried as much as she could.

Then the mother said, "Little Three Eyes, do you climb up; you can see better about you with your three eyes than Little One Eye can."

Little One Eye scrambled down, and Little Three Eyes climbed up. But Little Three Eyes was no cleverer, and might look about her as much as she liked—the golden apples always sprang back from her grasp. At last the mother became impatient and climbed up herself, but could not touch the fruit just as little as Little One Eye or Little Three Eyes; she always grasped the empty air.

Then Little Two Eyes said, "I will go up myself; perhaps I shall prosper better."

"You!" cried the sisters. "With your two eyes, what can you do?"

But Little Two Eyes climbed up, and the golden apples did not spring away from her, but dropped of themselves into her hand, so that she could gather one after the other, and brought down a whole apron full. Her mother took them from her, and in stead of her sisters, Little One Eye and Little Three Eyes, behaving better to poor Little Two Eyes for it, they were only envious because she alone could get the fruit, and behaved still more cruelly to her.

It happened, as they stood together by the tree one day, that a young knight came by.

"Quick, Little Two Eyes," cried the two sisters, "creep under, so that we may not be ashamed of you"; and threw over poor Little Two Eyes, in a great hurry, an empty cask that stood just by the tree, and pulled also beside her the golden apples which she had broken off.

Now, as the knight came nearer, he proved to be a handsome prince, who stood still, admired the beautiful tree of gold and silver, and said to the two sisters:

"To whom does this beautiful tree belong? She who gives me a branch of it shall have whatever she wishes."

Then Little One Eye and Little Three Eyes answered that the tree was theirs, and they would break off a branch for him. They both of them gave themselves a great deal of trouble, but it was no use, for the branches and fruit sprang back from them every time. Then the knight said:

"It is very wonderful that the tree belongs to you, and yet you have not the power of gathering anything from it."

They insisted, however, that the tree was their own property. But as they spoke Little Two Eyes rolled her cask and apples from under the cask, so that they ran to the feet of the knight. Little Two Eyes was angry that Little One Eye and Little Three Eyes did not tell the truth.

When the knight saw the apples he went toward them, and asked where they came from. Little One Eye and Little Three Eyes answered that

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they had another sister, who might not, however, show herself, because she had only two eyes, like other common people. But the knight desired to see her, and called, "Little Two Eyes, come out." Then Little Two Eyes came out of the cask quite comforted, and the knight was astonished at her great beauty, and said:

"You, Little Two Eyes, can certainly gather me a branch from the tree?"

"Yes," answered Little Two Eyes, "I can do that, for the tree belongs to me." And she climbed up and easily broke off a branch, with its silver leaves and golden fruit, and handed it to the knight.

Then the knight said, "Little Two Eyes, what shall I give you for it?"

"Oh," answered Little Two Eyes, "I suffer hunger and thirst, sorrow and want, from early morning till late evening; if you would take me with you and free me, I should be happy."

Then the knight lifted Little Two Eyes on to his horse, and took her home to his paternal castle; there he gave her beautiful clothes, food and drink as much as she wanted, and because he loved her so much he married her, and the marriage was celebrated with great joy.

Now, when Little Two Eyes was taken away by the handsome knight, the two sisters envied her very much her happiness. "The wonderful tree remains for us, though," thought they; "and even though we cannot gather any fruit off it, every one will stand still before it, come to us, and praise it." But the next morning the tree had disappeared, and all their hopes with it. It was discovered at Little Two Eyes' new home, transplanted during the night.

Little Two Eyes had happy a long time. Once two poor women came to her at the castle and begged alms. Then Little Two Eyes looked at their faces and recognized her sisters, Little One Eye and Little Three Eyes, who had fallen into such poverty that they had to wander about and seek their bread from door to door. Little Two Eyes, however, made them welcome, and was very good to them, and took care of them; for they both repented from their hearts the evil they had done to their sister in their youth.

**7. Outline of the Story.** The following outline was prepared by a teacher to assist her in learning the story *One Eye, Two Eyes, Three Eyes*, and to give her greater confidence in the first telling. Such an outline might be laid on the desk in an inconspicuous position where the self-distrustful teacher could glance at it often enough to keep the thread of the story. It is perhaps unnecessary to say that there will be no definite statement of the "theme" to the children.

**THEME OR CENTRAL IDEA.** Homely virtues and lovable character are of greater worth than exceptional and special endowments without these qualities.

**INTRODUCTION.** The family. Peculiarities of members. Lovable character of Two Eyes. Scorn and abuse from others because she is like ordinary people.

I. Daily occupation of Two Eyes and her suffering from hunger.

(a) She sits weeping. Wise old woman appears and questions her.

(b) She acts on counsel of old woman, and a dainty table, bountifully spread, appears.

(c) Suspicion of family.

II. Spying of sisters.

(a) One Eye watches and is easily sung to sleep by Two Eyes.

(b) Three Eyes watches and sleeps with only two eyes. She discovers the magic feast spread.

III. Anger of mother and sisters and sacrifice of Two Eyes' beloved goat.

(a) Two Eyes discovered weeping by wise old woman, who counsels her.

(b) She obtains heart of goat, and buries it.

IV. Appearance of wonderful tree, with gold apples and silver leaves.

(a) Failure of mother and two daughters to secure fruit.

(b) Success of Two Eyes.

V. The knight appears.

(a) Two Eyes quickly concealed by sisters.

(b) False claim of sisters and their failure to secure fruit.

(c) Just anger of Two Eyes. She reveals her presence and plucks apple for the knight.

VI. End.

(a) The knight carries Two Eyes away and marries her. The wonderful tree appears at her new home.

(b) The sisters, admirable women, appear at the palace of Two Eyes, are recognized and forgiven.

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These are some of the details of the scenes which by vivid narration and by skillful questioning we must lead the children to see, if we are to succeed in "getting the story over" to them. Again, this study is to aid the teacher; it is not to be given to the children. It is not intended to suggest that such an outline be actually written out for every story, but that, in the preparation for telling, the conscious effort to visualize in such manner as here indicated is of the greatest possible aid to an effective oral rendering.

I. Appearance of different members of the family. Try to see One Eye with her large, evil, Cyclopean eye in the middle of her forehead, and Three Eyes, with her two ordinary eyes and the extra one like her eldest sister's. Picture their scornful, overbearing attitude toward gentle little Two Eyes, and the latter's sorrow and misery.

II. The pathetic figure of little Two Eyes as she sits on the hillside weeping from hunger. Fancy her own beloved goat a sympathetic though dumb witness of her grief. Picture the sudden vision of the wise old woman, a sort of kindly witch, or withered fairy godmother. It may not be given to grown-up mortals to see just how the magic table came, but we can see the grateful, famished child before it, and her faithful goat standing by as attendant.

III. In the next important scene the suspicious sisters go out singly as spies. One Eye comes dragging her weary, ungainly body after beautiful little Two Eyes and her active goat, and is quickly put to sleep. The table appears, but the scene is not filled out this time. The next day Three Eyes is seen stumbling through the tall grass, exhausted but more determined and better equipped for her evil purpose than her older sister. She is sly and deceitful, and we see her spying on Two Eyes from out the half-shut extra eye while the ordinary ones are innocently closed.

IV. Pass over with as little visualization as possible the killing of the goat and the burial of the heart. Try to see the wonderful fairy tree laden with golden apples and covered with silver leaves. Picture the exasperation of the mother

and the wicked sisters as the branches, like conscious things, include their grapes. But with easy grace, Two Eyes, to whom the tree represents her lost friend, gathers her little apron full of the beautiful apples and descends only to meet the spiteful looks and renewed abuse of the others.

V. The climax. The knight comes riding down the road. He is a real fairy prince, and we must see him in dress and bearing seated on a "prancing steed." Now he stops beside the gate, attracted by the glittering tree. We have already seen little Two Eyes hustled under cover as a despised object. With bravado and deceit the wicked sisters attempt to pluck fruit for the knight, but are unsuccessful, as before. With righteous anger Two Eyes, radiant and eager, reveals her presence and is brought forward by her reluctant sisters. She graciously offers a branch of the precious fruit to the knight, who is more dazzled by her charm than by the fruit. She briefly tells her story when questioned, and we see her borne away by the knight to unknown happiness.

VI. The last scene, and one painted in less vivid colors, is that of Two Eyes now grown and happily married, standing at her palace door, beside which her beautiful tree is flourishing again at her old home. Two miserable-looking women appear and are revealed to her as her cruel sisters. Two Eyes, with noble nature, overlooking their abuse of the past, forgives and provides for them. The peaceful scene fades, and we are left with full assurance that Two Eyes will be "happy ever after."

**8. Story Reproduction.** It has already been suggested that the children should not always be asked to reproduce the stories told them. There should be an extensive use of stories for pure enjoyment and for the total effect, without any attempt to have pupils gain sufficient mastery to be able to tell them again. It is fatal to the highest service rendered by literature to have the children get the notion that they will almost invariably be called upon to reproduce the selection in oral or written form. And when the teacher does decide that it is desirable to have pupils make the story their own for re-telling, this reproduction should rarely be called for after the





Photograph in an hour at Normal 1 among school

COLUMBUS AT THE COURT OF SPAIN  
History, 1492-1493

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first hearing. It is usually better to tell the story once and talk about it afterwards with the children, get their opinions and thoughts and by questions seek to clear up any impressions that are vague or misleading. It is often a good plan to wait a day or two and then ask the class what story they would like to hear. If the new one is called for, tell it again. If it is not called for, it is a fair assumption that it would not be a good one to have them learn, for they do not care enough about it. But if a story is called for again and again, we have the best possible reason for mastering it. In the first place, in satisfying their desire to hear it over and over they will, after a few repetitions, almost know it. This is especially true of the type of accumulative stories told in first grade. "When the teacher can say, 'You like this story, don't you?' 'Wouldn't you like to have your father and mother, or little brother or sister, would you like to have you tell it to them.' Or, 'Wouldn't you like to invite some of the kindergarten children to our room to hear this story?' When you can tell it so they will enjoy it, we will ask Miss Brown to let her class come to visit us." If there is no class of younger children in the school, a member of their own class who has been absent may supply the motive for reproduction.

**9. Method.** If exact memorization on the part of the adult story-teller tends to hamper and limit the vivid imaging and re-living of the tale, still more is this true of children. Seek rather for an ordered thinking of the succession of events and for a full and vivid picturing of the scenes. There should follow a gradual polishing of the language in which it is told, "to make it sound well," or "to make the picture more beautiful." If some child says Snow-White was "awful scared" when she found herself alone in the woods, ask him, when he is through with that part of the story, for other ways of expressing the same idea; and having found a better phrase, say to the class, "We will all try to tell it this way." Sometime soon call on the same child again for this part of the story, and before he begins, ask, "How did Snow-White feel when she found herself alone in the woods?" In this way try to build up a



higher consciousness of good English as well as right habits in its use.

To get better expression there must be a fuller realization of an experience and a more genuine feeling regarding it. If a child in narrating *Snow-White* says in a dull, expressionless way, "What a beautiful little girl" (where the dwarfs find her asleep in one of their beds), try to make the situation more real for that child. Ask some such question as this: "Should you be surprised if, when you go to your room tonight, you should find in your bed the most beautiful child you ever saw?" "What might you say?" (Accept any natural and appropriate expression, if given in a suitable tone and manner.) "Now try to tell us what the little dwarfs said and the way they said it when they discovered Snow-White." Never try to have pupils get tone or inflection by direct and conscious imitation. Imitation in this connection is all right so long as it is unconscious; for then it is not slavish and deadening. The value of hearing a story well told many times by the teacher is that the children unconsciously appropriate much that is good in tone, gesture and language.

Written reproduction of stories should not be called for below the third grade, and should not be required frequently there. Stories which pupils can tell fluently and in beautiful language orally are not uncommonly mutilated and robbed of all beauty when they attempt to express them in writing. They are usually much more successful in the preparation of a short dialogue suggested on page 190. Only the shortest and simplest stories should be used for written reproductions as whole, below the fourth grade. Fables and carefully selected anecdotes are good for this purpose.

Free-hand drawing with pencil or colored crayon, paper cutting and paper tearing offer flexible and stimulating mediums of expression for children before they have learned to write easily. Ask first grade children to tell in pictures the story of *The House that Jack Built*, *The Little Red Hen* or *The Three Pigs*, and the result will be an indication of what parts of the stories stand out prominently in their minds. If they

are asked to arrange their pictures in the order of the events in the story, it is, for their stage of development, just as much an exercise in ordered thinking as the making of an outline would be for older children. Second grade pupils can make the pictures and write a few explanatory sentences under each.

Every first grade should be supplied with a few of the best picture-story-books in addition to the regular reader and supplementary reader. There is nothing that so stimulates the desire to learn to read and so deepens the appreciation of the children as seeing and handling books beautifully illustrated by competent artists. Some fortunate children have these in their homes, but many do not. Before they have learned to read, they will get untold pleasure from such books as the *Calico Picture Book*, the *Walter Crane Picture Book*, and those illustrated by Lellie Brooke and Kate Greenaway.

## II. DRAMATIZATION

**10. Dramatization Explained.** The term *dramatization* is rather a pretentious sound and in the mind of the inexperienced is calculated to establish visions of quite finished and somewhat elaborate performance or plays prepared with care for some special occasion. Such an idea is incorrect and misleading, for the practice in the best primary school is directly opposed to elaboration. We have only to watch the free, unconscious play of any group of children, or even the spontaneous activity of a baby in the home, to realize that children instinctively dramatize or express themselves through imitation and representation. If spoken language does not accompany the representative play, we may say it is a crude pantomime, but if language be introduced, we have a more complete dramatic form. Little girls with their dolls playing "Lady-Cat-to-see," with their tea-drinking and interchange of kindly confidences, are dramatizing life as they see it about them. Boys who put chairs in a row and play that they have a train of cars, collect tickets, call stations, and set passengers

on and off, now representing the chug of the wheels, the toot of the engine and next carrying on an imaginary dialogue, are producing a little *evolved drama*.

Children are so much more spontaneous, flexible and unconventional than adults that they are much more disposed to express their thoughts and feelings in a bodily way. They jump up and down, clap their hands and shout with joy; they weep aloud until taught restraint; they are inclined to be demonstrative in their affection; they seek to imitate all moving things, animate and inanimate, and endeavor to try out, in a concrete way, every new experience.

**11. Dramatization as a Mode of Clarifying Ideas.** Dr. Dewey has pointed out that the purpose of expression is not merely to acquire greater facility in telling what one already knows, but that it is an essential factor in the learning process; that it is only by trying to get back behind a process or an idea and express it in varied ways that we come to a clear and full realization of all the process or idea means. The old principle of "impression before expression" must be supplemented by the equally valid one that expression is essential to a full and adequate impression. It is upon this interpretation that the highest valuation of dramatization and all other expressive arts rests.

The kindergarten has made excellent use of a simple sort of imitative and representative play, and offers a good example along this line for the thoughtful primary teacher. As pupils gain control over the more complex modes of expression, such as spoken and written language, drawing and construction, they tend gradually to drop the more primitive modes, but while the latter predominate, as they do very largely through the first three years of school, we have a great opportunity if we fail to give them suitable exercise.

**12. Over-Emphasis on Oral Expression.** The argument we most frequently meet in support of dramatization in the school is that it leads to more appreciative and expressive oral reading. As a consequence, the larger part of this type of activity has centered quite closely about the reading matter

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of the grades, and there has been a good deal of insistence that spoken parts be well filled out, so far as possible in the words of the book; otherwise it is a fad, "Wherein is the gain in expression?" As a consequence of this view, the period when children do not wish to express themselves in words, and do not do so effectively to any great extent, is not usually provided for, and they are hurried over into the next stage, that of the fluent use of language to accompany action, before they are prepared for it.

### *First Grade*

**13. Limitations.** The first grade teacher should be satisfied to use a great deal of pantomime, with only a small amount of spoken language, and that largely the children's own. This very simple form of dramatic action is a valuable accompaniment of other subjects as well as reading. Nature study, arithmetic, literature, music and games contain possibilities of dramatic representation which, with a good deal of freedom and a little lead, the children can evolve themselves. If initiative has been encouraged, they will readily invent a little play depicting any familiar experience in which they are interested.

**14. Example of Pantomime.** At Christmas time children love to have an imaginary toy-shop. One child will act as a window display in the toy-window, and then, as other centers of population will have their own individual toys, simple or elaborate.

**SUGGESTED PRELIMINARY STEPS.** "What time did you go when your mother took you home, James?" James enumerates and describes various things, among them an engine which could be wound up, like a train of cars. "How did the engine go? Can you show me? Choose time, or you shall see if you can wind him up and make him go like an engine." A hint will usually be needed to add the engine. Other children each claiming hands about the parts of the engine, and soon a complete train with "motor" and "chugging" is taking its course around the room and through the

Now the engine has run down let us see what other things we can have." Question other children who are eager to tell about dolls that will open and shut their eyes and say "Mama" and "Papa," about rocking-horses, Jack-in-the-box, jumping-jacks, tin soldiers, and the like. Let the children plan how they can be represented and add them, one at a time, to the toy-shop. As rocking-horses they usually stand with one foot well advanced and swing backward and forward, bending the knees and throwing the weight first on one leg and then on the other. For Jack-in-the-box they will perhaps take four small chairs and form a space in which a boy will take his place in a crouching position. An imaginary spring is released, and up he jumps with a grin or grimace, looking the part as truly if he has run his fingers through his hair to give it a tumbled appearance. In place of the chair, the children may think of using four of their own number, who will kneel, clap hands and leave a square open space for "Jack."

In striving for good effect, the teacher should not be the judge who accepts and rejects effort and suggestion. Throw responsibility on the children, and let them decide when a satisfactory representation is obtained. Questions may be used to arouse thought and closer observation. "How do you feel when Jack springs out at you?" "Would a Jack startle you who acted as Henry does?" Let a number of children try until, under class criticism and suggestion, an amusingly realistic effect is obtained. Always encourage variety and individuality.

As a completed play it is genuine fun to have a shopman and sale people who will arrange all the toys in the shop (which may be any open space in the room) and who will then display them and show off their attractions to prospective buyers in the person of play mothers and fathers who come with their children to choose toys. The teacher may be the proprietor—unless some child of exceptional resource is in the group. The teacher should always be the one to display the big doll which open and close their eyes when standing and reclining. She will raise and lower tiny girls who hold





A GOOD SUBJECT FOR DRAMATIZATION

body and limbs rigid and who move their heads and other members in a stiff, jerky way. If the children spontaneously introduce some spoken parts, inquiring prices, ordering things sent home, etc., encourage them to do so, and help them to make the dialogue lifelike; however, do not insist on any set phrases. Strive, above all things, for freedom and naturalness and for the real play spirit.

An interesting variation of the toy-shop is to play that at midnight all the toys come to life and for a brief time play among themselves in their own characteristic way. Have all arranged in place, then the children who are not engaged as toys toll off the twelve strokes of the clock. Instantly all the toys become animated and begin to act their several roles. The dolls sit up, open their eyes, rise stiffly and move about, all the Jacks in all the boxes spring up and down and appear to be talking to each other, the train starts on its course, the jumping-jacks leap about, the toy animal move around and talk in appropriate animal language, the toy bird in the cage hops about and trills or whistles. And then when the clock strikes "one," all with perfect decorum take their appointed places and compose themselves for another day.

Mother Goose rhymes are especially well adapted to dramatization in this grade. One will, of course, choose those which have some little organization or plot, and not the absolutely chaotic ones like *Hey-diddle-diddle*. Such examples as *Little Boy Blue*, *Old King Cole*, *Sing a Song of Sixpence*, *The Old Woman Who Lived in a Shoe*, and *Jack and Jill* are among those which may be effectively worked out by little children in dramatic form.

**15. Use of Dramatization in Nature Study.** In nature study this sort of representation may be used to clarify ideas, to help the child to enter sympathetically into the lives of other creatures and to fix important facts. In the spring, it will help to get into the full spirit of the season and its ramifications if the children are encouraged to take the parts of cocoons, moths, butterflies, bees, birds, flowers, rain and wind, and out of the interrelations of these creatures



and forces to weave a little dramatic play. The flowers are curled up supposedly in the earth, really upon the floor; butterflies and moths are quiet, as in chrysalis and cocoon hidden in available nook and corners. The sunshine comes, a group of lightly dancing children scattering here and there from uplifted, twinkling fingers the warm life-giving rays. Next come the rain-drops, dancing, too, but with less gaiety, the arms perhaps rising and falling in a vertical movement, the fingers tapping here and there to represent the falling rain. Gradually the flowers begin to rise and unfold, some remaining low in kneeling posture with up-turned face to represent violets or other low-growing plants, others stretching up a lily and rose. Soon the butterflies and moths emerge with appropriate movements of flight. If the children have had opportunity for observation, they will have noted differences of movement and habit and will try to imitate these. If it is desired to employ more children, or to make the picture more complete by adding the human element, another group may be a party of children, dancing and skipping among the flowers, and then forming a ring to dance and sing some little spring song. In this connection *dance* does not mean any special kind of step; light, rhythmic, natural stepping or skipping is all that is required. Below is a good song for use at this time:

## IN THE SPRING

From Melodic First Reader

French Child's Song

*Gaily and with expression.*

It is spring, Let us sing, Gay-ly dan-cing, Gay-ly dan-cing;

The musical score consists of three staves. The top staff is a treble clef with a key signature of one sharp (F#) and a 4/4 time signature. The middle staff is an alto clef, and the bottom staff is a bass clef. The music is a simple, rhythmic melody with lyrics written below the top staff.

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IN THE SPRING

END.

It is spring, Let us sing, Gay - ly dan-cing in a ring.

The musical score consists of three staves. The top staff is a vocal line in G major, 2/4 time, with a melody that is repeated. The middle and bottom staves are piano accompaniment, with the right hand playing chords and the left hand playing a simple bass line.

Repeat from the beginning to the end.

1. The gen - tle-men bow this way, Then a-gain bow this way  
2. The la - dies all bow this way, Then a-gain bow this way.  
3. The lit - tle girls bow this way, Then a-gain bow this way.

The musical score for the bowing game consists of three staves. The top staff is a vocal line with three verses of lyrics. The middle and bottom staves are piano accompaniment, with the right hand playing chords and the left hand playing a simple bass line.

DIRECTIONS FOR PLAY:—Have the children choose partners and form a circle. They dance in a circle while singing the first part of the song, which is also the refrain. When they sing "The gentlemen bow this way," the partners bow to each other, making the gentlemen bow by putting heels together and allowing the arms to drop straight in front. Then they bow in the opposite direction as they sing "Then bow again this way"; then join hands and dance to the refrain. The whole is repeated for the second verse, this time bowing as the ladies do, by drawing one foot back, bending at the waist and spreading the skirt. In the third verse they courtesy.

*Second Grade*

**16. Best Basis for This Grade.** In this grade, as well as in the first, there should be a good deal of opportunity for the pantomimic and for dramatic representation of familiar experiences; more frequently, however, literature will form the basis and inspiration for dramatization. A good deal of care still needs to be exercised in the matter of requiring consecutive and sustained dialogue. Straining after exact spoken parts with young children is sure to lead either to a halting and joyless performance or to a stilted and showy one which has consumed an undue amount of time to prepare.

**17. Kinds of Stories to Select.** Stories which are dramatic in essence and structure are prominent in the list selected for this year, and some which were enjoyed when told in the first grade are suitable for dramatization a year later. (See lists on page 106.) Stories which are fundamentally dramatic break up naturally into acts and scenes, and the spoken parts are all but ready for the lips of the various speakers. But not all stories dramatic in structure are suited to dramatization in school. As a rule, the story chosen for this purpose should be one in which more than three or four children can participate. The story of *One Eye, Two Eyes, Three Eyes* is full of dramatic situations (see outline on page 178), but for two reasons it is not suited to school dramatization; several important events would be difficult to represent and only a few children could take part. If such exercises are to be really educative, it is important that all the children in the class should at some time have an opportunity to participate. That is, there should not be any set "cast," in which any one child would always take a certain part; the actors should change frequently, especially in the more attractive and interesting parts.

**18. A Good Story Dramatized.** The story of *The Elves and the Shoemaker*, of which a good version may be found in *Stories to Tell to Children*, by Sara Cone Bryant, is one which children love, and which pupils in this grade can easily dramatize. Perhaps they have read it or have learned to tell it, and teacher or child may suggest some day that they play it.

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Ask them what characters will be needed and they will mention the shoemaker and his wife, the customers, and the friendly little elves. While the story does not state that the couple have children, interest is added by putting a boy and a girl into the family. This will serve also to engage more pupils in the play. Next find out, if you have not previously done so, what the pupils know about a shoemaker's work, and call on different children to demonstrate their knowledge by characteristic movements of hammering and sewing. If no one should be able to illustrate clearly, appoint a committee to get the desired information. Let the class decide what scenes can't be shown in order to make the story understood. Work up one scene at a time as to characters, action and spoken parts and, so far as possible, let the children lead, direct and criticise. When completed, the play may stand somewhat as follows:

The shoemaker is seated at work. The wife enters.

*Wife:* We have very little food in the house and our coal is almost gone. Has any money been paid you today?

*Husband* (sadly): No, I have no money, and I have leather enough for only one more pair of shoes. I hope to finish and sell these tomorrow.

The wife turns away, takes up a broom and begins to sweep in a disheartened way. Enter a boy and a girl.

*Boy:* Mother, I'm hungry; isn't it almost supper time?

*Girl:* Mother, I'm so hungry; may I have some bread?

The mother shakes her head, puts down her broom, wipes her eyes on the corner of her apron and goes out, followed by the children. Shoemaker continues work for a time, pretends to cut out a pair of shoes, lays them on work bench and goes out.

Six or eight elves enter on tip-toe. They slip about, peering at things, then spy the unfinished work; several of them look in a workmanlike way on the various parts. Others pretend to sort nails and thread needles, and others sweep and dust. As they work they sing softly some cobbler's song, such as the chorus of *The Little Shoemaker*:<sup>1</sup>

<sup>1</sup> From *Songs of the Child World*, No. 1. Copyright, 1897, by the John Church Company.

A-rap-a-tap-tap, A-rap-a-tap-tap,  
 Hear the hammer'nt t-t-t-t-t,  
 A-rap-a-tap-tap, A-rap-a-tap-tap,  
 Making shoes for you and me.

Then they join hands, caper and dance about, and at last slip out.

The next morning, The shoemaker enters. He has the finished shoes and shows surprise and perplexity.

*Husband:* Wife, wife, come and see what has happened!

*Wife:* Why! Who could have done it and see how clean everything is!

Enter customer.

*Customer* (examining shoes). These shoes are just what I want. I will take them.

Pantomime of wrapping and paying for shoes.

*Husband:* Now we can go out and buy food and more leather.

*Wife:* Who could have done it? Perhaps it was the elves.

*Husband:* Who know! Let us watch tonight and see.

They go out together. They return. Shoemaker cuts out two pairs of shoes, lays them on the bench and then both hide behind the door or other object. The elves slip in and repeat the performance of the night before. From time to time the couple peep out at them. The elves leave and the couple come out.

*Wife:* Poor little things! How cold they must be! Let us make them some nice warm clothes. I will make a little suit for each of them and you can make shoes.

*Husband:* So we will.

They set to work and soon the garments are ready. They hide again before. The elves enter. They spy the clothes and go through the movements of putting them on. They admire each other and give evidence of delight by clapping hands, laughing and dancing about.

Either while they are dancing or at the close of the frolic, the rest of the play might bring *The Bremen*.<sup>1</sup>

<sup>1</sup> From *Songs of the Child World*. Copyright, 1897, by the Joan Church Company.

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Hi! Hi! be still, on tip-toe now advance,  
We're here to have a merry Brownie dance,  
We will form a circle here, stepping lightly for we fear  
We may wake up the sleeping world, for dance.

The next day—Enter mother and two children. They busy themselves setting the table, then one of the children calls the father to dinner. They eat themselves and a short "tea party" scene, such as all children are adept at, follows.

*Father:* The elves certainly were good friends to us.

*Mother:* I hope the dear little fellows are enjoying their warm cloths.

*Children:* And now we shall never be hungry and cold any more. Hurrah for the cloth!

The above is only intended to be suggestive; other words just as suitable may be evolved by other classes. Strive to preserve the spirit of the thing. The many repetitions that come in response to the genuine delight of the participant and child audience will insure a sufficient certainty about language without any direct memorization.

*Third Grade*

**19. Greater Care in Selection.** There is no reason why children in this grade should not get just as much pleasure and profit from dramatization as they did in the first two years, provided they are stimulated to do the sort of thing for which their developing powers and expanding interests fit them. They are more prone to self-consciousness, and we need to be very careful not to try to get them to act parts which seem to them silly or beneath their dignity. They are not as ready to imitate animals as are the younger children. They might do it if playing alone, but even before the small public of their classmates they are reluctant to attempt anything that may seem ludicrous. Parts for the big boys, especially, need to be chosen with care, and stories or events selected for dramatization should not call entirely for what is graceful, airy and poetic.

Local history frequently offers good material for dramatic representation. The boys will enjoy being Indians, soldiers, scouts, early settlers, etc. The heroic appeals to them, and history stories of a more general nature abound in episodes which are well worth being wrought into simple dramatic form. Thanksgiving, Dominion Day, or some other holiday may suggest something of this kind. Children in this grade are better ready, also, to handle the longer and more complex fairy tales such as *Sleeping Beauty*, *Hansel and Gretel* and *Snow-White*. The boys delight in the last named, because it is such fun to play the part of the seven little dwarfs. It is only a step in natural progression from history stories and the more complex fairy tales to the hero tales such as *Siegfried*, *King Arthur* and *Robin Hood*, which boys and girls of the intermediate grades delight to depict in dramatic form.

**20. Increase in Stage-Setting.** While elaborate stage-setting and costuming are never in place for a class room exercise, a little more along this line must be yielded to older children, for they demand a greater realism. For example, first grade children would probably be entirely satisfied to play *Goldilocks and the Three Bears* and merely pretend that the bowls were on the table, whereas third grade pupils playing *Snow-White* would wish to have seven real bowls and spoons for the seven dwarfs, and they would act with greater freedom and expression if permitted to have the real article to handle. Imagination is probably just as active, but in a different way; a gold paper crown helps the boy to preserve a more kingly bearing, and a train assists the girl to carry herself with queenly grace. From the beginning, the children should be encouraged to make cardboard or wooden implements, paper head-dresses and other parts of costumes indicative of race, rank or ceremonial. In primary grades this construction work should be kept very simple and quite within the children's powers. If this principle is observed, much valuable training in taste, and skill of hand may be obtained.

**21. Dialogues May Be Provided.** As a part of the work in English for this year, dialogues for one or two plays might



ROBIN HOOD AND HIS BAND



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be written. For this exercise short and simple stories should be used, as pupils at this stage are easily discouraged. The first effort along this line will be more successful if conducted as a general class exercise in which contributions will be made by different children, the whole representing a sort of composite of the individual suggestions. If it seems best not to attempt the whole play in written form, they can learn to make an outline under the teacher's guidance and then write the dialogue for one of the principal scenes. They should be taught to take the story, in a form which they can read easily, and go through that portion of it which they are to use, omitting all merely narrative, descriptive and connective passages, and selecting the actual spoken parts. For the actual dramatization it is also at times much better not to attempt the whole story, but to have some child tell it up to a certain point, then play one or two of the most effective and easily represented scenes in which there is a good deal of action, resorting again to the telling at any point where action falls off or becomes too complex or unsuited to the means at hand. This method makes it possible to use material which suits the children's maturer taste but very limited powers.

**22. Bibliography.** The following books treat largely of the selection of stories and of method in story-telling, but the first three contain, also, many stories in full:

*How to Tell Stories to Children.* Sara Cone Bryant. Boston. 1905.

*Stories to Tell to Children.* Sara Cone Bryant. Boston. 1907.

*Story-telling, What to Tell and How to Tell It.* Edna Lyman, Chicago, 1910.

*Stories and Story-telling.* Edward Porter St. John. Philadelphia, 1910.

*Some Great Stories and How to Tell Them.* Richard Wyche. New York. 1910.

*The Moral Instruction of Children* (Chap. V, VI). Felix Adler.

*Picture Work.* Walter L. Hervey.

For a practical treatment of the whole subject of the place of literature in the school, consult:

*Literature in the Elementary School.* Porter L. Ma. Clintock.

*Literature and Life in School.* J. Ross Colby. Boston. 1906.

The following are valuable aids in finding stories desired:

- A Finding List of Folk and Fairy Tales.* Boston Public Library.  
*A List of Stories to Tell to Children under Twelve Years of Age.* Carnegie Library. Pittsburg. 1906.  
*Index to Short-Stories.* Salisbury and Beckwith.

The following titles include desirable collections of fairy tales and folk tales:

- Book of Folk Stories.* Horace E. Sudder.  
*Fairy Stories Every Child Should Know.* Hamilton Wright Mabie.  
*Firelight-Stories.* Carolyn Bailey.  
*The Blue Fairy Book.* Andrew Lang.  
*Grimm's Fairy Tales.* Edited by Mrs. E. Lucas.  
*English Fairy Tales.* Joseph Jacobs.  
*Fairy Tales.* Hans C. Andersen. Edited for primary grades by Mrs. Turpin.  
*Fairy Tales.* Hans C. Andersen. Translated by Mrs. E. Lucas.

In the collections named below are included various types of stories:

- For the Children's Hour.* Bailey and Lewis.  
*Mother Stories.* Maud Lindsay.  
*More Mother Stories.* Maud Lindsay.  
*The Pig Brother and Other Stories.* Laura E. Richards.  
*Heart of Oak Books (I, II, III).* Chas. E. Norton.  
*Children's Book.* Horace E. Sudder.

An excellent list of myths, fables and legends is the following:

- Stories of Long Ago.* Grace H. Kupper.  
*The Heroes, or Greek Fairy Tales.* Charles Kingsley.  
*The Wonder Book and Fables of Tales.* Nathaniel Hawthorne.  
*Norse Stories.* Hamilton Wright Mabie.  
*In the Days of Giants.* Abbie F. Brown.  
*Aesop's Fables.* Edited by Joseph Jacobs.  
*Nature Myths.* Flora Cooke.  
*The Book of Nature Myths.* Florence H. Brook.  
*Book of Legends Told Over Again.* Horace E. Sudder.  
*Book of Saints and Friendly Beasts.* Abbie F. Brown.  
*When the King Came (Bible Stories).* Georg Heiler.

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From the large list of modern fanciful tales the following are selected for recommendation:

- Little Black Sambo.* Helen Bannerman.  
*The Tale of Peter Rabbit.* Beatrix Potter.  
*Short Stories for Short People.* Aspinwall.  
*Just-So Stories.* Rudyard Kipling.  
*Fairies I Have Met.* Mrs. R. Stawell.  
*Christmas Every Day and Other Stories.* W. D. Howells.  
*Pinocchio; the Adventures of a Marionette.* C. Collodi.  
*Alice's Adventures in Wonderland.* Dodgson (Lewis Carroll)  
*Fanciful Tales.* Frank R. Stockton.  
*Water Babies.* Charles Kingsley.  
*Uncle Remus, His Songs and His Sayings.* Joel Chandler Harris.

Good animal stories are the following; these seem to be the favorites, and are strongly recommended:

- So-Fat and Mere-Mew.* Georgiana M. Craik.  
*Cat Stories.* H. H. Jackson.  
*Among the Farmyard People.* Clara D. Pierson.  
*The Jungle Book.* Rudyard Kipling.  
*Wild Animals I Have Known.* Seton Thompson.  
*True Bird Stories.* Olive Thorne Miller.

There is a great variety of history stories; the following are especially good:

- Stories of Colonial Children.* Mara L. Pratt.  
*Stories of Great Americans for Little Americans.* Edward Eggleston.  
*Stories of Pioneer Life.* Florence M. Bass.

The following is a graded list of twenty-five of the best folk and fairy tales:

- The Old Woman and Her Pig.*  
*The Three Bears.*  
*Chicken-Little.*  
*Little Half-Chick.*  
*The Three Pigs.*  
*The Gingerbread Boy.*  
*The Three Billygoats Gruff.*  
*The Little Red Hen and the Fox.*  
*The Elves and the Shoemaker.*  
*Cinderella.*  
*One Eye, Two Eyes, Three Eyes.*  
*The House in the Wood.*

*The Musicians of Bremen.*  
*Diamonds and Toads.*  
*The Fisherman and His Wife.*  
*The Frog Prince.*  
*The Golden Goose.*  
*The Three Wishes.*  
*Snow-White and Rose-Red.*  
*Snow-White.*  
*Sleeping Beauty.*  
*Rumpelstiltskin.*  
*Faithful John.*  
*Prince Cherry.*  
*Beauty and the Beast.*

A graded list of a few of Hans Christian Andersen's stories is given below:

*Thumbelina* (condensed version).  
*The Snow Man.*  
*The Real Princess.*  
*Five Peas in a Pod.*  
*The Fir Tree* (condensed).  
*The Constant Tin Soldier.*  
*The Ugly Duckling* (condensed).  
*The Candles.*  
*The Emperor's New Clothes.*  
*The Nightingale.*  
*The Flying Trunk.*

There are a number of books which will be found helpful in dramatization. The following are suggested:

*Festivals and Plays, in School and Elsewhere.* Percival Chubb.  
*Reading in Public Schools* (Chap. X). Briggs and Coffman.  
*Children's Classics in Dramatic Form* (Books I, II). Augusta Stevenson.

### III. PLAYS AND GAMES

**23. Importance of Plays and Games.** The emphasis on play in education has varied greatly at different times, ranging from the period of Greek civilization to the present day. At intervals there have arisen strong advocates of play as an important factor in the educative process, and to name these men would be to name many of the greatest figures in the

history of education. The present prominent position given to play in our schools is due to the accumulation of such influence from leaders of the past and to the interest aroused by modern study of what play really is and its significance in the life of animals and of man.

**24. The Meaning of Play.** Various theories have been offered regarding the nature of the play impulse and the purposes served by it. One of the earlier theories held that play is due to surplus energy, which, not being used up in the necessary pursuits of life, is expended in "useless" activity. Those holding this view still admit that play has a value for purposes of recreation. But the theory of play which is based on the law of evolution is the one which has in recent years had the most profound effect. The position is taken that the young of all higher animals, including man, engage in activities of a playful nature which directly serve as a preparation for the serious duties of life. The child is a being in process of development, and play is a very large factor in this development. Play is instinctive, and because it is so, certain desirable habits, attitudes and powers can be established only through the kinds of play which best suit a given stage of development. The little girl with her dolls and simulated housekeeping cares is the mother and housewife in the making. The boy with his mechanical contrivances, his trade games, and games of competition, is exercising unconsciously the powers which will be needed in later life. Some of the instincts and tendencies common to children which may be made the basis for desirable habits through well-directed play and work are imitation, curiosity, emulation, competition, the social instinct, and those which lie back of constructing, collecting and exploring. The school is now turning to account in a definite way many of these instincts which were once ignored.

**25. Play and Work.** There is, or should be, no real antagonism between work and play. We have been prone to think of play as a kind of senseless fooling, and work as only that sort of doing which is attended by a feeling of effort or strain and a sense of compulsion. But from the child's standpoint

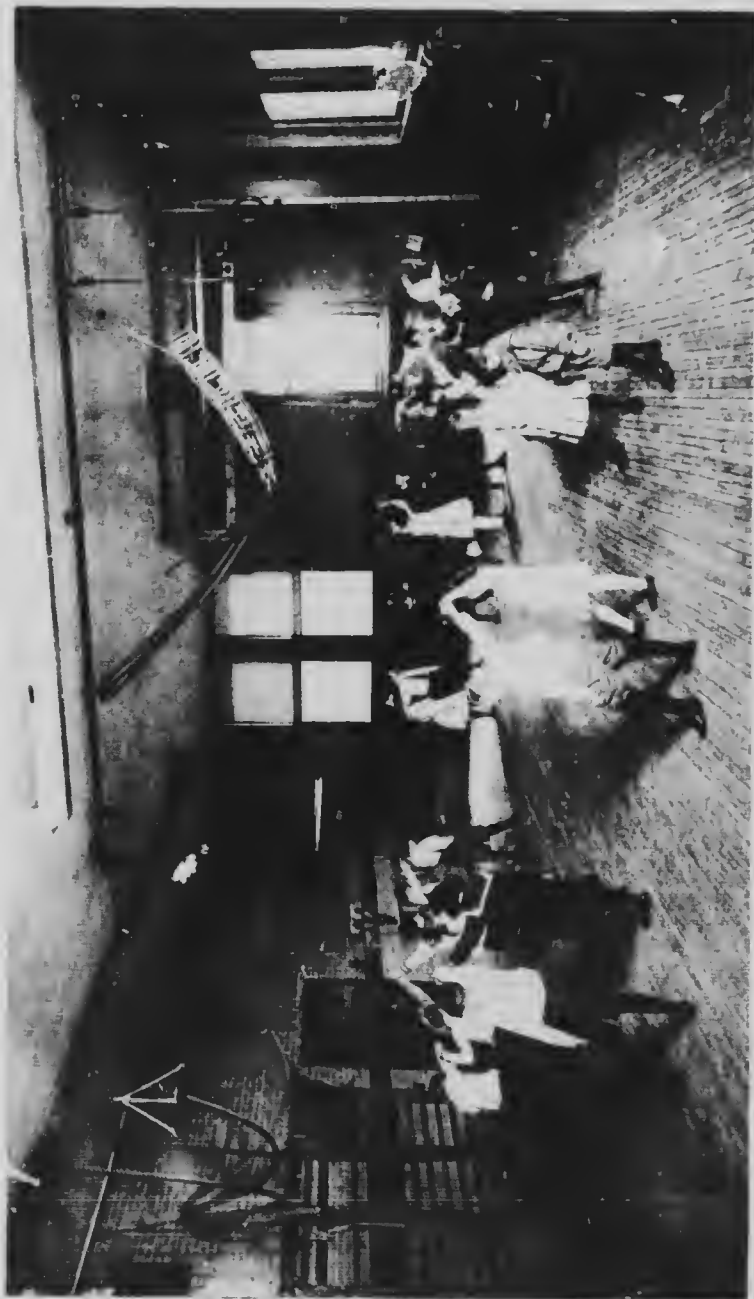
there is no such sharp division, and much that would seem work to the adult is play to him, while much that uncomprehending grown-ups look upon as foolishness is genuine work to the child, in the sense that all his powers are earnestly engaged in what seems to him worth while. Joyousness must attend both work and play if the highest ends are to be attained, and the right sort of play tends to establish the habit of eager, whole-souled work. Professor Dewey, in *The School and the Child*, says: "The peculiar problem of the early grades is, of course, to get hold of the child's natural impulses and instincts and to utilize them so that the child is carried on to a higher plane of perception and judgment, and equipped with more efficient habits; so that he has an enlarged and deepened consciousness and increased control of powers of action."

Again, in the same book, Professor Dewey says: "The teacher must ask himself: Will the proposed mode of play appeal to the child as his own? Is it something of which he has the instinctive roots in himself and which will mature the capacities that are struggling in him? Will the proposed activity give the sort of expression to these impulses which will carry the child on to a higher plane of consciousness and action, instead of merely exciting him and then leaving him just where he was before, plus a certain amount of nervous exhaustion and appetite for more excitation in the future?"

**26. Special Purposes of Play in School.** RECREATION: Even in schools where the more active tendencies of children are well provided for by means of construction work, dramatization, gardening, etc., there remains still, in a five-hour school day, a large amount of intellectual work involving no bodily activity; and where the active occupations just referred to are not in use, the protracted confinement to tasks of a sedentary nature may be really detrimental to health. In all schools, then, a reasonable amount of active play is justified on the basis of the need of recreation—literally re-creation. After a period of close application to study, or sitting still, often in a partially cramped position, something that will relieve the







EXERCISE WHICH RESULTS IN PERMANENT BENEFIT

tension, hasten the sluggish circulation, give the lungs a chance to expand and the spirits an occasion to rise, if really needed. For this, nothing is better than free play under the general supervision of the teacher. Open the windows, get the children out of their seats, and for a few minutes let them engage in some active game, encouraging genuine laughter and applause for the winner, and you accomplish much towards banishing fatigue and putting zest into another period of close, earnest work.

Standing stiffly in the aisles and going through military movements or closely ordered calisthenics, a poor substitute for play. Close attention and absolute and prompt obedience to directions are required in this, and, as a result, there is no real relaxation, which is something more than a momentary loosening of muscular tension. Genuine relaxation can come only with spontaneous activity which is in a measure self-directed.

**PHYSICAL DEVELOPMENT AND TRAINING.** Many leaders in the field of physical education now hold the view that well-organized play and games provide for the physical development of normal children far more effectively than any amount of formal gymnastics. However well-equipped the gymnasium, and however highly trained the teacher, if the spirit of play is not prominent the attitude of mind will not be conducive to the best physical results.

In *Health and Education*, the ninth year-book of the National Society for the Scientific Study of Education, Part One, the author, Dr. Thomas D. Wood, says: "The activities of physical education should be carried on out-of-doors whenever this may be made possible. The gymnasium should be considered an emergency space, valuable, to be sure, when required by inclement weather and under other circumstances; but it should never interfere with possible use of nature's infinitely better playroom out-of-doors. \* \* \* Education, whether in physical training or other branches, should secure for the pupil the ability to meet the wider opportunity and the possible emergencies in life; but the performance of tasks

requiring primarily subjective control of action and aimed not directly at benefit to bodily health or mental faculty may not only fail to accomplish its direct purpose, but also fall short of the intended indirect benefit to other faculties and powers.

**INTELLECTUAL RESULTS.** Play and games engage the intellectual as well as the physical powers. An alert mind is needed in order to make the accurate survey of constantly changing situations and to form the rapid judgments that are required. More or less definite calculations of relative distances, strength and numbers are frequently needed in the more active games, while many of the quieter schoolroom games have decided intellectual features connected with number or language. The opportunity for training in leadership is not the least of the values accruing from play.

**MORAL EFFECT.** Wherever a group of children are brought together in a natural and social way, moral and ethical issues are sure to arise, and nowhere are these issues and opportunities more prominent than in play. True play is not lawless, but is regulated by clearly understood rules which all who participate must obey. These rules are sometimes traditional, and sometimes evolved by the children; they are enforced by public opinion (that of the group), and any member who fails to comply is made to feel the displeasure of his fellows. He may even be debarred from the sport. During the primary years the favorite forms of play are rather individualistic, but even at this period there must be a good deal of coöperation in order to secure the highest individual enjoyment, and a frequent subordination of self is demanded. Wholesome rivalry, generosity, hardy determination, and a sense of justice and honor are encouraged.

**27. Why Games Should Be Taught.** It is the exceptional neighborhood group which has ready command of any considerable number of the best traditional games, and in many neighborhoods and schools, in the country as well as in the city, there is a great lack of knowledge of such games. Teach some of the best games, in order that children may have their birthright of which modern civilization tends to deprive them,

and also that wherever they are gathered together they may have a substitute for mere horse-play, or mischievous and vicious occupations. Games taught and used at school will enrich the lives of pupils and will help to connect the school life with the outside life—a thing always to be desired.

**28. The Teacher's Place in Play.** Remember that play is a mere name, if the activity be rigidly directed and controlled by an adult. The teacher must make herself really one of the group and must enter into the play with genuine enjoyment, or she will have a depressing effect upon the sport. If leadership is to be developed among the pupils, the teacher must learn to slip the reins gradually into their hands and make them feel that they are responsible for success or failure. Her part is to teach the game or develop it bit by bit, and her presence should always be welcome; but more and more the children should be trained so that happy play goes on without her direct control. A general supervision of the playground, and a friendly eye upon the children from time to time, is always advisable.

**29. Materials and Apparatus.** With a wealth of fascinating material all about, the country schools have been very negligent in making use of it. Few realize what a boon to teacher and children a load of sand and a barrel of pebbles from the creek would be. These can be dumped in a sheltered corner of the yard and here the youngest children will play happily as long as they are permitted to do so. Is there any reason why a group of wriggling little people might not be sent out there for a while during the regular school hour? Empty tins which they will bring will serve as molds, twigs will be used as trees, toy houses will be made of cardboard, inexpensive blocks which any carpenter can cut or which older boys will be glad to prepare will serve in a hundred ways. In addition to the free play, little problems in numbers, nature study or geography may occasionally be worked out, the teacher examining the results and commenting on them. Simple, inexpensive apparatus should be provided out-of-doors. Swing low horizontal bars, see-saws, board slides, suspended iron rings,

a jumping-hole filled with sawdust or straw, all furnish excellent and varied bodily exercise.

**30. Selection of Games.** Observation of spontaneous play reveals decided difference in the types enjoyed by children of different ages. Sex causes some variation, also, though up to ten or twelve years girls and boys reared under wholesome conditions like very much the same kind of active play. Highly-organized games governed by many rules and requiring much team work are not suited to the period we are discussing, and, on the other hand, such very simple games as "Ring-around-a-roy" are too babyish for any but the youngest first grade children. Other games, while simple in organization, appeal to such universal and persistent tastes that, once enjoyed, they are not outgrown for years. *Three-deep* and *Hill-dill* are of this type; second or third grade children play the e games, and boys and girls of the upper elementary school still delight in them. For this reason it is impossible to arrange any list of games in exact gradation. All that is here attempted is to indicate approximately the period *low* which the game is usually not successful. Placing a game in the list for second grade, for instance, does not mean that third grade children will not care for it. Children's native likings and social proclivities forbid any such rigid classification.

#### *First Grade*

**31. Games, With and Without Songs.** Many excellent games for the first grade are available for use by the teacher, and she has great opportunity to exercise care in selection. Some of the best are offered here, and are such as may be used in any school.

**CHARLEY OVER THE WATER.** The player forms a ring and one of the number is chosen to be "Charley," who takes his place in the center. The children in the ring join hands and dance or skip about, repeating the rhyme.

Charley over the water,  
Charley over the sea,  
Charley caught a black bird,  
Can't catch me!

As the last word is pronounced, the players stoop, and Charley tries to tag them before they can get into that position. Should he succeed, the player tagged becomes Charley and the play proceeds as before.

**THE FARMER IN THE DELL.** One child is chosen for farmer, and the others circle about him, singing the words of the first verse of the song.

**THE FARMER IN THE DELL.**

From "Lilts and Lullies" (Old Ball, Game and Song)

The musical score is written in 2/4 time with a key signature of one flat (B-flat). It consists of three systems of music. The first system has two staves: a vocal line and a piano accompaniment. The second system also has two staves: a vocal line and a piano accompaniment. The third system has two staves: a vocal line and a piano accompaniment. The lyrics are written below the vocal lines.

1. The farm - er in the dell, The farm - er in the dell,  
2. The farm - er takes a wife, The farm - er takes a wife,

Heigh - o! the dai - ry - o! The farm - er in the dell.  
Heigh - o! the dai - ry - o! The farm - er takes a wife.

- 3 The wife takes a child, The wife takes a child,  
Heigh-o! the dairy-o! The wife takes a child.
- 4 The child takes a nurse, The child takes a nurse,  
Heigh-o! the dairy-o! The child takes a nurse.
- 5 The nurse takes a dog, The nurse takes a dog,  
Heigh-o! the dairy-o! The nurse takes a dog.
- 6 The dog takes a cat, The dog takes a cat,  
Heigh-o! the dairy-o! The dog takes a cat.
- 7 The cat takes a mouse, The cat takes a mouse,  
Heigh-o! the dairy-o! The cat takes a mouse.

- 8 The mouse takes the cheese, The mouse takes the cheese,  
Heigh-o! the dairy-o! The mouse takes the cheese.
- 9 The cheese takes the knife, The cheese takes the knife,  
Heigh-o! the dairy-o! The cheese takes the knife.
- 10 The knife stands alone, The knife stands alone,  
Heigh-o! the dairy-o! The knife stands alone.

At the beginning of the second stanza the one in the center chooses another child as "wife." This one in turn chooses the "nurse," and so it continues, the last chosen always being the one to select next time, as the words indicate. As the group in the center increases, these children form a smaller ring within the greater and revolve with the others. At the end, the one chosen as "knife" is privileged to begin the game again in the role of farmer.

**ROUND AND ROUND THE VILLAGE.** Another pleasing action song is "Round and Round the Village," which can be used effectively with any number of children, up to the limit of space available for action. The players form a circle, clapping hands and singing the first verse.

#### ROUND AND ROUND THE VILLAGE.

From "Children's Old and New Singing Games," by Mari R. Hofer.

English.

Round and round the vil-lage, Round and round he vil-lage,

Round and round the vil-lage As fast as we can go.

2.

In and out the windows,  
In and out the windows,  
In and out the windows,  
As we have done before.

3.

Stand and face your partner,  
Stand and face your partner,  
Stand and face your partner,  
And bow before you go.

4.

Follow me to London,  
Follow me to London,  
Follow me to London,  
As we have done before.

At the beginning of the second verse, the children in the ring raise their clasped hands to represent windows, and the outside player winds in and out, trying to get all the way around while this verse is being sung. At the third verse, the one in the center chooses a partner, and the two skip around the outside of the ring, returning, at the end of the fourth verse, to the center, where they bow, the first player taking his place in the ring and the second becoming the outside player. The game is then repeated. Where many children are playing, more may be engaged actively at a time by having several outside players who will simultaneously go through the movements described above.

**THE MUFFIN MAN.** Players form a ring and one of the number is chosen to be the muffin man who takes his place in the center. Those in the ring skip about, singing:

#### THE MUFFIN MAN

From "Children's Old and New Singing Games," by Mari R. Hofer.

New England.

1. Oh, do you know the muf - fin man, The  
2. Oh, yes, I know the muf - fin man, The

The image shows a musical score for the song 'The Muffin Man'. It consists of two staves. The top staff is in treble clef with a key signature of one sharp (F#) and a common time signature (C). The bottom staff is in bass clef with a common time signature (C). The lyrics are written below the top staff, with two verses. The first verse is '1. Oh, do you know the muf - fin man, The' and the second is '2. Oh, yes, I know the muf - fin man, The'. The music is simple and suitable for children's singing.



muf - fin man, the muf - fin man? Oh, do you know the  
muf - fin man, the muf - fin man; Oh, yes, I know the

muf - fin man, That lives in Dru - ry Lane?  
muf - fin man, That lives in Dru - ry Lane.

The center player chooses one from the ring, and this child in—

"Oh, yes, I know the muf-fin man," etc.

Those in the ring skip about again and all sing,

"Two of us know the muf-fin man," etc.

Then another player is chosen, and the next verse will begin,

"Three of us know the muf-fin man," etc.

The following is a modification of this old folk-game for a schoolroom having stationary desks. It may be played so as to involve the use of multiples of 2, 3, or 4, and hence would be serviceable, in this form, in second or third grade for teaching the multiplication tables.

If it is desired to employ multiple of 3, station three children in the front of the room, as far apart as space will permit. Have the rest of the class stand in the aisles. The three leaders advance, singing the first line of the first stanza, and retire to position (walking backward) as they sing the second line. The class now reply with the second stanza,

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advancing as they sing the first line and retreating (walking backward) as they sing the second line. The leaders now come forward and each chooses another player from the class. They take hands, retire to position, and sing, "Six of us," etc.

The first and second stanzas are repeated with accompanying movements and the three players just chosen will choose in turn. This will bring nine children to the front of the room and now all sing, "Nine of us know the muffin man," etc. Although only the three last chosen are to choose next time, let all of the group advance and retreat in order to avoid having a number of children standing with nothing to do.

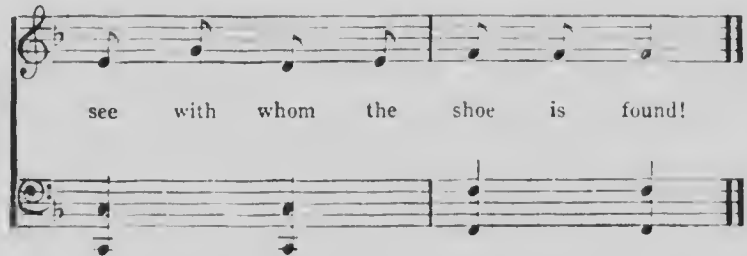
**HUNT THE SLIPPER.** The children sit close together in a circle. One in the middle gives a small slipper to one in the circle saying, "This must be quickly mended." The cobbler promises. The members in the circle, pretending to work with movements of hammering and sewing, sing:

**HUNT THE SLIPPER.**

From "Children's Old and New singing Games," by Mari R. Hofer.

English.

Cob- bler, cob - bler, mend my shoe, Have it done by  
half-past two, Stitch it up and stitch it down, Now



The customer demands his shoe. The cobbler no longer has it; for it has been quickly passed from child to child as secretly as possible. The child with whom it is found goes to the center, and the game begins again.

Children seated at desks can play this game. They learn to make misleading movements across aisles, pretending to pass the slipper over, thus making it more difficult to detect just where it is.

**SPIN THE PLATE.** Children sit on the floor, or in small chairs, in a semi-circle. The teacher or other leader twirls a plate or a large wooden ring and calls the name of some child. This child must catch the object before it has stopped spinning, and, if successful, she twirls it again calling another child. If she fails, the leader repeats the process, calling a different child.

*Variation.* Twirl the plate, then put some question in arithmetic, as, "3 and 4? John." John must give the sum correctly and catch the whirling plate before it falls. For a time, it will be necessary for the teacher to lead. Later, by limiting the questions to a certain range and a certain process, the children can in turn put the questions and judge of the correctness of the answer.

**STARTERS.** The leader stands at the front of the room, face to the wall. As many others as space will permit go to the back of the room. The leader counts to a point agreed upon, and while she is doing so the others advance up the aisles in irregular order, on tip-toe. When the count is finished the leader wheels instantly, scans the players and any not absolutely motionless in whatever attitude the end of the

count found them, must sit down. Continue as long as desired or until all are out.

This game may be used to habituate pupils to the correct usage of "I saw" for "I seen." Have the leader always say, "I saw Kate," "I saw Henry," when indicating the children who moved. Change the leader from time to time as the game is repeated. To be successful in the schoolroom, this game requires aisles of good width, or a broad space somewhere in which to move freely.

**FLY AWAY.** One child is chosen as leader. He comes to the front of the room and, raising his hands with a flying motion, says: "Birds fly," "Bats fly," "Butterflies fly." The children are expected to imitate the motion instantly. Suddenly the leader says, "Horses fly," and from time to time he intersperses incongruous statements of this kind, accompanied by the flying motion. Any child caught imitating the movement at these "catch" points drops out of the game, which continues a suitable length of time or until only one child is left.

**FLYING CLOUD.** Pupils stand in two lines down two aisles, facing each other. At least one aisle must be between them, in which the center player, or "It," stands. A clean handkerchief or cloth is the "cloud," and this is tossed from one to another across the aisle, while the center player tries to catch it. If he succeeds, the one who threw last becomes "It."

Other games, old but always productive of enjoyment and excellent for use in the first grade, are the following:

Cat and Mouse, Drop the Handkerchief, Pussy Wants a Corner, I Spy, Stoop Tag, Word Tag, Jolly is the Miller.

#### *Second Grade*

**TOMMY TIDDLER'S GROUND.** A space is marked off as Tommy Tiddler's Ground. The child selected by "counting out" takes his place within this territory, and the others run across the line into his ground, calling out, "I'm in Tommy Tiddler's ground, picking up gold and silver." Tommy may

pretend not to notice them for a time, but suddenly he makes a dash, attempting to tag some child while in his territory. The first child tagged becomes Tommy Tiddler.

**HILL-DILL.** There are two goal lines, parallel to each other, with a space of forty feet or more between. "It" stands back of one goal line, and the rest of the players are back of the other. "It" calls "Hill-dill come over the hill, or I'll come over for you." The object is for the players to get across the space and inside the opposite goal line without being caught. Any child caught must join "It," go to the other goal and repeat the call. This continues until all are caught. Then the first one caught becomes "It," and the game is begun again.

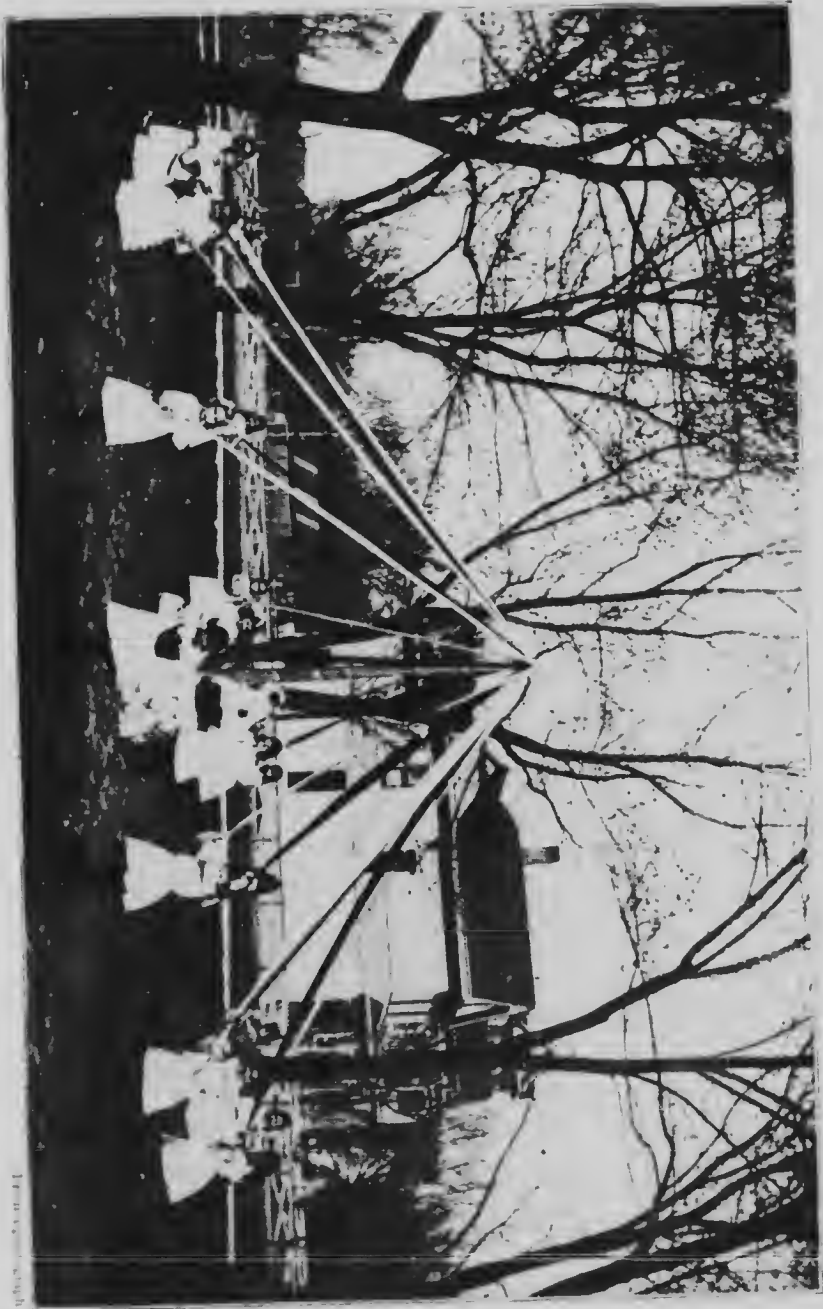
**NUMBERS CHANGE.** The players stand in a circle and are numbered consecutively. One player stands in the center. He calls two numbers, and the players so designated must change places. The player in the center tries to secure one of their places. The one left without a place takes his position in the center.

*Variation.* As a drill in multiplication tables in second or third grade, suspend cards about pupils' necks bearing in plain figures such numbers as 24, 27, 28, 30, 32, 36, 40, or any other multiples upon which it is desired to drill. The teacher stands beside the center player and calls out, "3 times 8, 4 times 7, change!" and the players bearing the numbers 24 and 28 are expected to change places, the center player trying at the same time to secure a place. Players exchange cards frequently, in order to fix different products in mind.

**GOING TO JERUSALEM.** In this game there should be one more child than there are seats to be used. This can be managed by marking in some conspicuous way the desks of any absent pupils and, in like manner, one other desk; indicating thus that the e seats are to be disregarded in the game.

The teacher or other leader claps in brisk marching time while the children march up and down the aisles. Suddenly the clapping ceases and this is the signal for each child to slip into the nearest seat. One will of course be left standing and when the marching is resumed this child goes to his own

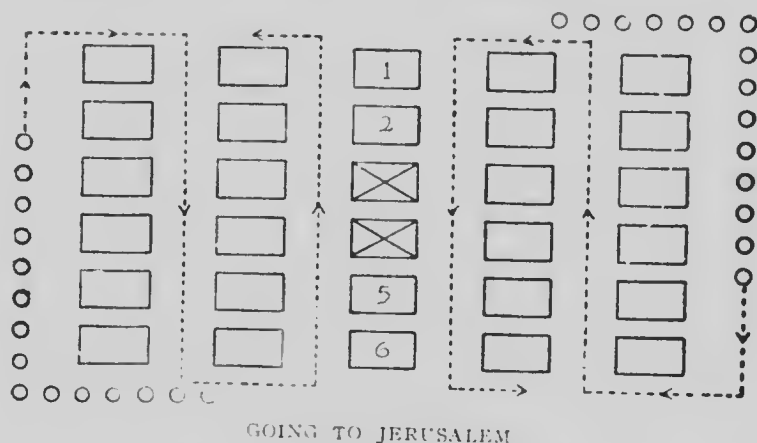
WINDING THE MAYPOLE



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seat and remains there, thus keeping the number of players one greater than the number of unoccupied seats. Continue a suitable length of time, or, with a small class, until all but one child have dropped out. If the class is large, let half play at a time, the others clapping for them; or, better still, let two separate groups play simultaneously on opposite sides of the room, being careful so to plan the lines of march that there shall not be interference in any aisle. The illustration shows a possible arrangement for two separate groups.



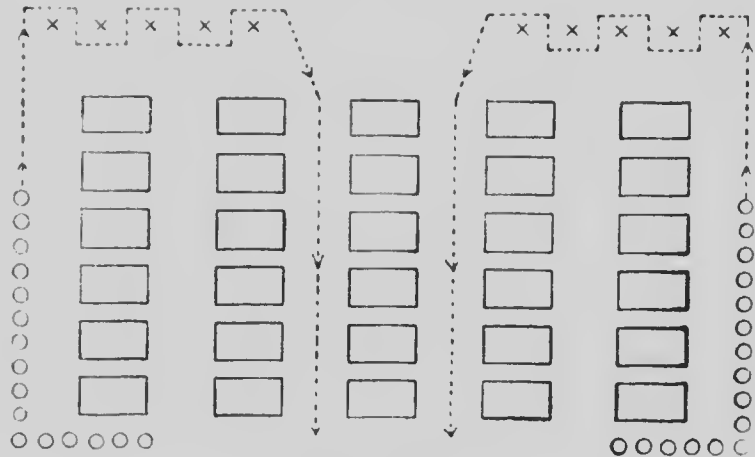
Seats marked with a cross are not to be used. Small circles represent players. It will be seen that there are, at the beginning, fifteen players and fourteen seats for each group. It may be understood that seats 1 and 2 belong to one group and seats 5 and 6 to the other. The broken line shows a course for each group which will prevent collisions.

"I SAY STOOP." This game is a variation of the old familiar game, "Simon says," but calls for more activity. The players stand in a circle, and in front of them the leader or teacher. The leader says quickly, "I say Stoop!" and immediately stoops and rises again somewhat as in a courtesy. The players all imitate the action; but when the leader says "I say Stand!" at the same time stooping himself, the players should remain



standing. Any who make a mistake and stoop when the leader says "I say Stand!" are out of the game.

**SERPENTINE RACE.** Several Indian clubs or ten-pins are placed in a line with one of the aisles and a convenient distance apart. The same is done in front of the corresponding aisle on the other side of the room. The children choose sides. One child from each side runs over the course indicated by the teacher and between the clubs and back again to the wall. Score is kept, each child who wins scoring a point for his



SERPENTINE RACE

side. If a club is knocked down it must be replaced by the runner before going further. The side scoring the most points wins. In the diagram the rectangles represent seats; the small circles, children; the crosses, the clubs or ten-pins. The dotted lines are the lines of march.

*Variation.* Instead of keeping score, this may be made a simple relay race, one player succeeding another as rapidly as possible on both sides, stopping always to replace any clubs knocked over. The object is to see which side can finish first. (This game is offered here by courtesy of G. E. Johnson, and is from his *Education by Plays and Games.*)

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VARIATION OF "CUPID'S COMING." (The original game is from *Schoolroom Games and Exercises*, by Bainbridge.) Some initial letter is decided on. Suppose it to be S. All replies must then be made by words beginning with S and ending in *ing*. For example:

*First player:* Mr. Smith (or Mr. Starr, Mr. Strong, etc.) is coming.

*Second player:* How is he coming?

*First player:* Skipping (or sneezing, or stepping, or smarting, etc.).

*Second player:* Mr. Smith is coming.

*Third player:* How is he coming?

*Second player:* (Replies as did first player).

Thus it continues, addressing a new player each time, until no more words answering the requirement can be thought of, when another initial is chosen.

This game serves two purposes beside that of enjoyment. It is a good exercise in determining the initial sounds of words and furnishes excellent training in clear enunciation of the termination *ing* which so many people slur over.

TRADES. Sides are chosen. Goals are marked off forty or more feet apart. One side chooses some trade, which it is to represent in pantomime. The players of this side advance from their goal to the goal of the other side and say:

"Here are some men from Botany Bay,  
Got any work to give us today?"

The other players say, "What can you do?" The answer is given by going through some motions descriptive of the trade chosen. The opponents guess what trade is represented. If they guess correctly, the actors run back to their goal pursued by the guessers. Any one tagged must join the other side, who now become the "men from Botany Bay." The game continues until one side captures all the players of the other side. (From *Plays and Games for Schools*, issued by the Wisconsin Department of Public Instruction.)

RELAY TOUCH RACE. A chalk line is drawn across the front of the room. At the signal, "Go!" the pupils in the

front seats run to the front, stoop, touch the line, to the back wall, touch it, then run back to their seats, which they raise so that they may stand behind their desks out of the way of the children directly behind them, who instantly dart out and race. The row that finishes first is the victorious one.

Among the many other published games suitable for second grade are the following:

Have You Seen My Sheep? The Boiler Burner, Cross Tag, Blind Man's Buff, Come with Me, Pa. in a Circle.

### Third Grade

**Duck on a Rock.** Each player provides himself with a smooth stone of convenient size for throwing. A large flat rock is placed at one end of the space and some distance away a line is drawn, behind which the players must stand when throwing. All throw at the rock and the one whose stone or "duck" land farthest from the goal is "It." This player puts his "duck" on the rock and the others throw at it, trying to knock it off. The one who is "It" tries to tag any player who crosses the line in an effort to recover his "duck." Any player tagged before he can recross the line becomes "It." If the "duck" on the rock is dislodged it must be replaced by the catcher before he can tag any player.

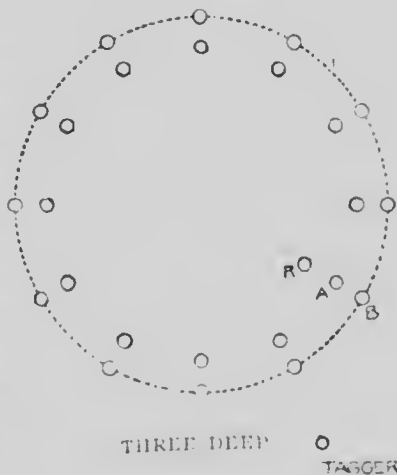
By substituting bean bags for "duck" and a box for the rock, this game may be played indoors. As an outdoor game for primary children bean bags are also better to use than stones.

**Turnt Drib.** The players stand in two circles—those in the outer one exactly behind those in the inner. One player is chosen to be the runner and another to be the tagger. The tagger pursues the runner outside the circle. At any time when the runner is hard pressed he may dart inside the circle and station himself in front of one of the couples. This group then becomes "three deep," and at once the outside player must take up the race, as he is now the runner. And so it continues until the tagger succeeds in touching a runner, at which time their part in the game are reversed and the tagger becomes the runner.

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In the illustration, the runner (R) has just taken refuge in front of A, and B must now take flight, as the tagger will pursue him instead of R.

**CUSHION DANCE.** The players are divided into two even groups, who then unite to form a circle. A cushion or a pile of bean bags is placed in the middle, and about this the children dance. Suddenly one side tries to pull the other toward the object in the center so as to compel one of its number to touch the pile. Whoever touches the pile or cushion must drop out, and the contest continues until one side is entirely vanquished.



**"HAVE MY SEAT!"** Start with all children seated but one. As there must be only one vacant seat, mark conspicuously the seats of any absent pupils and these seats will not be used in the game. The odd player goes to a distant corner of the room, counts "One, two, three," and starts for the vacant seat. But before he reaches it, some child sitting near has taken it saying to the odd player, "Have my seat!" He starts for the second seat, only to find that it has been seized by another neighboring child, and so on. It is surprising how rapidly the base of operations changes from one part of the room to another while the odd child darts here and there trying to secure a seat. In order to avoid confusion the rule of the game is that only players seated within two or three spaces in any direction from the vacant seat may try for it. This game, if played briskly, is very amusing.

**BEAN BAG GAMES.** There are many delightful possibilities in play with bean bags. These games may be simple or complex, according to the ability of the children. A few types will

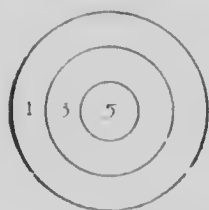
be described, and from these selection may be made to suit the various grades.

Let the older children make bags of denim or strong gingham and fill loosely with corn or beans; about  $4\frac{1}{2}$  by 6 inches is a good size.

1. A group of children each holding a bean bag may line up in front of a scrap basket. In turn they step to a certain position and attempt to toss their bags into the basket. Each child who succeeds scores one. One group may compete with another to see which will get the greater score.

2. Draw on the floor a circle about 18 inches in diameter. Have ten bean bags of two different colors, say five red and five blue. Children holding the red bags stand in an even line at a certain distance from the circle and throw, all together. They let their bags lie where they fell. Those holding the blue bags then will throw same. The number of bags of each color lying entirely inside the ring will give the score. As children become able to combine larger numbers, more may throw at a time.

3. Draw three concentric rings on the floor and number them as in the diagram. Two leaders choose sides, and the



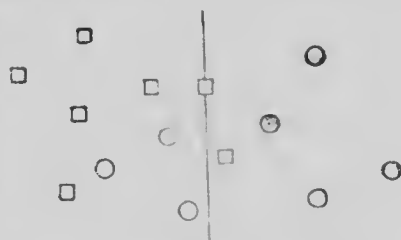
BEAN BAG GAME

players of the opposite sides play alternately. The children at their seat keep score, or one child may do so on the blackboard. Each bag that falls inside the inner circle counts 5, and in the other according to number. Those falling on a line count nothing. These wooden boxes of different sizes, one placed within the other furnish a good improved contrivance for a similar game.

Such games provide interesting occasions for much practice in addition. Different numbers than those suggested in the illustration may of course be substituted.

4. Draw a line on the floor and let two rows of children stand at equal distances on opposite sides of it. Use bags of two different colors. The two sides throw simultaneously, each trying to get his bag across the line into the enemy's territory. In the diagram

the small squares represent the reds and the small circles the blues. Five red bags have fallen across the line and two have not. The score is the difference between these numbers, or 3. Four blue bags have fallen



A BEAN BAG GAME.

across the line and three have not. Their score, therefore, is 4. It will be seen that this game provides much practice in subtraction. Change the number of players and distance from line in accordance with ability of players.

**HUNT THE FOX.** The class is divided into pairs, forming two lines facing each other several feet apart. One of the leaders is the "fox" and the other is the "hunter." The fox skips down the line in and out between the players in an irregular course. The hunter must follow exactly in the same course. When the fox is caught the two must get to the feet and the next couple become the new leaders. (From *Gymnastic Games*, by Maria Grey, Prentice-Pub. Co., New York, C.)

**THE OLD STONE.** Any number may take part in this game. One player is selected as the "stone." He crouches down, keeping perfectly quiet. The others run around him, coming nearer and nearer, until he suddenly leaps up and chases them. The one caught becomes the old stone for the new game. (This exercise is also from *Gymnastic Games*.)

**CRACKER RACE.** Draw circles on the floor in line with each child at the front and at the back of the room. Place the same number of crackers in each circle at the front. Beginning at the back let the children in the back row, on a signal, run to the front, take an cracker, place it in the circle at the back, get another, and continue until all have been taken.

Then these children, without stopping return the erasers in the same manner to the front circle. Let the class applaud the winner, and then repeat the race, the children in next to the back seats being the contestants. Continue thus until all have had a chance to run. Occasionally let the winners in each set try for the championship.

This may be made a relay race by having it understood that each child is to take his turn as soon as the one back of him is seated. The contest, then, is to see which row can finish first.

*Note.* In all such games it is of the utmost importance that pupils be trained to keep their feet out of the aisle in order to avoid tripping the runners.

Among the games suitable for third grade not here explained in detail are these:

Stealing Sticks, slap Jack, Bull in the Ring, Still Pond, Partner Tag, Hen and Chicken.

**OTHER GAMES.** The following games are also recommended, have not been divided according to grade, but each division is roughly graded from the easiest to the more difficult.

#### BALL GAMES

**FRENCH BALL.** 1. Children are seated in a circle with one child in the center. The ball is rolled across the circle, the object being to get it across to a certain child without having it stopped by the center player.

2. Children stand in line facing a leader. Leader throws ball to first child, who returns it, and thus it passes on down the line.

3. Several children, each holding a rubber ball, start at one side of the room, bounding their balls and catching as they advance. The child who reaches the opposite side of the room without missing is the winner.

**DONUT BALL.** Children stand in a circle, with a smaller group in the center. A player in the circle throws a large soft rubber ball as he tries to hit one of the center players.

These players dodge in a lively manner. Any player in the circle may pick up the ball and throw again. When one on the inside is hit, he takes his place in the circle. The last player to be hit is the one who wins.

This may be adapted to an ordinary schoolroom by having a small group of players take their places in a certain prescribed area in the front of the room, the throwers remaining standing at their desks. Have one child stationed at the front of the room to pick up the ball and toss it back to some one of the throwers. The players at the front may not step beyond certain bounds in trying to dodge the ball.

#### SENSE GAMES

**Uses.** Many simple exercises in the form of games can be used for developing keenness in observation of a special kind. Children can conduct these games very largely by themselves, and they are especially useful at recess on days when the weather will not permit play out-of-doors. They are particularly well-suited to first and second grade.

**Seeing.** 1. Have the pupils select a leader who will place three or four simple unlike objects on a desk or table and ask the class to observe them for an instant; then to turn away or cover their eyes. The leader then re-arranges the objects quickly, asks the children to look at them again, and calls upon some one to reproduce the first arrangement. If the child makes an error it will be noticed by someone in the group. This exercise can be increased in difficulty by increasing the number of objects.

2. A leader performs a number of non-related acts while the others observe. Someone from the group is then called on to perform the acts in the same order and manner.

3. The children cover their eyes or turn their faces away while the leader places a number of unlike objects upon a table or desk. All observe the arrangement for about a minute, and then the leader covers the objects and asks the children to write a list of everything they saw. The one having the longest list with fewest errors wins.



If the teacher conducts this exercise with children who can not write and spell, it may be utilized for oral language purposes. One child is called on and permitted to tell of only one object: as, "I saw a knife"; the next says, "I saw a top," and so it continues until not another object can be thought of by anyone. The last child to name an object wins.

*Hearing.* 1. One child closes his eyes while the leader strikes various resonant objects, as a bell, glass tumbler or tin cup, which he is required to name by the sound. If bells of various sizes or types can be obtained, the children will enjoy guessing whether it is the big, the little, the middle-sized bell, etc., which is tapped.

2. Divide the children into two groups, and place them on opposite sides of the room. While those in one group face the wall the leader indicates a child in the other group to sing, or speak, or read. The group whose faces are turned away will tell which child performed the act. Alternate from side to side. The leader may keep tally to see which side is the more accurate. This lends spirit and interest to the game.

3. Choose a leader and have all the other children hide their faces on their arms. The leader selects a number of children and stations them in different parts of the room. Each child so placed asks in turn, "Where am I?" The leader calls on some child to name the location without uncovering his eyes. This is a good test of ability to locate the source from which sound comes.

*Feeling.* 1. The leader collects a variety of small objects and conceals them. One at a time the other players back up to the leader and with hands behind them receive an object which has been previously held up so that all the rest can see it. The child is to tell what the article is by feeling of it. The following verse may be used as an accompaniment:

"The mystery man has come to town,  
to town, come to town,  
And he'll want you to get up and down,  
See what he has brought you.

2. A large bag is loosely filled with an assortment of small familiar objects. One at a time the children feel of these through the closed bag, and write down a list of everything they think they have identified. Younger children may play the game by mentioning aloud, in turn, the objects felt, until they can name no more.

#### PLAYFUL EXERCISES

**CHANGING SEATS.** Children are seated and in an attitude of attention. The teacher says, "Change, right!" and each row moves across the aisle to the right, each child slipping into the seat exactly opposite his own. This will leave one row standing in the right-side aisle and one row of vacant seats at the left-side of the room. The teacher may now say, "Left!" and the children will slip back into their own seats. The next order may be "Backward!" or "Forward!" With very little children the teacher will make motions at first, indicating the directions. Later they must follow only the spoken orders, "Left," "Right," etc. A variation requiring a little more control on the part of the children is to have the row left standing run in a certain understood order around to the opposite side and take the seats that are vacant, or run from the back and take vacant seats at the front, etc. Quick, snappy directions given in an unexpected order are needed.

**FOLLOW YOUR LEADER.** During the marching let the leader skip, hop, glide, step high, run, clap or change position of hands and let the others follow the movements. The changes may be agreed upon first, as walk eight counts, skip eight counts, clap eight counts etc. This gives a very satisfactory effect.

**PICTO, CHANGE.** Let a pupil rapidly chalk on the floor in the aisles at irregular intervals as many crosses, less one, as there are pupils. During the marching the teacher says, "Picto, change!" and each child tries to change his position so as to stand on a cross. The one who fails, erases a cross and takes his seat.

DESK AS APPARATUS. 1. Jumping Jack. Lift the seats. Place the right hand on the front of the desk and the left on the upright of the desk behind. At a signal, jump through the space into the other aisle. Turn. At a given signal, jump back.

2. River Row. Sit on the desk with feet on the seat. On certain counts, go through the movements of rowing.

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- Games, Seatwork and Sense Training Exercises.* M. A. Holton. A. Flanagan Co.
- Plays and Games for School.* Issue I by C. P. Cary, State Superintendent. 1911. Madison, Wis.

## SONGS

**32. Value.** The song taught by imitation—the rote song—is the basis of the child's education in music. By this means the first musical sense is aroused. The child learns to hear tones and to imitate tones in melody. The songs not only arouse the musical sense, but, if properly selected and presented, they will quicken all the sensibilities and make the pupil a keener and more appreciative observer of all things. For systematic instructions in methods in music, see that subject, in Volume Two.

Songs for children should be suitable in subject and sentiment and simple in form. The songs which they love are those which appeal to their experience or to their imagination and fancy. It is not enough that the subject be suitable; the

entire spirit of the poem must be childlike and must be written from the child's standpoint.

**33. Classification.** An exhaustive classification of songs is not possible, but in general they may be grouped as follows:

(1) Nature songs, including songs of the seasons, of flowers, of birds, of wind, of rain, of snow.

(2) Songs for special days, such as Christmas, Thanksgiving, Dominion Day, etc.

(3) Songs of industries and occupations, as songs of the farmer, the miner, the blacksmith, the sailor, the shoemaker.

(4) Lullabies.

(5) Marching songs.

(6) Games and motion songs, including all songs which can be dramatized, and therefore including many of the occupation songs.

(7) Nonsense jingles, to be particularly commended as cultivating a sense of humor.

**34. Dramatization.** When the pupils perform the actions described in the poem, we call it *dramatizing*. All singing games would come under this head, and many songs not originally written for motions very naturally lend themselves to this treatment. A revival of singing games would do much to simplify the discipline of the playground and add to the pleasure of the play hour.

The dramatization of other songs is something which can easily be carried too far and thus cease to be of any value in teaching music. See *Dramatization*, page 183.

From the music standpoint, the songs must be simple in form, not too long, and, where there is no instrument, complete without accompaniment. A rhythmical movement with marked accent appeals strongly to children and is of great value in cultivating a sense of rhythm. Care must be taken that the voice range is correct for children's voices. Remember there is always a danger of having children sing too low and almost no danger of asking them to sing too high.

**35. How to Teach the Song.** The directions for teaching a rote song as given in Volume Two, in the lesson on *Music*, are

quite sufficient. Sing the song as a whole several times, then phrase by phrase, having the pupils imitate each phrase until the entire song is memorized.

**36. How to Phrase the Song.** In the phrasing of a song, the same rules apply as in the reading of the poem. Make the children understand what the poem means, and express this meaning as nearly as possible in their singing. If this rule is followed, there is no necessity for any other.

A few of the simplest rules, however, are the following

- (1) Do not breathe in the middle of a word.
- (2) Do not breathe between a preposition and its object.
- (3) Do not breathe between a verb and its complement.
- (4) Dwell on the vowel sounds of words rather than on the consonant, but speak the consonant distinctly.
- (5) Be very careful in the pronunciation of the words, and remember that *the* before a word beginning with a vowel is pronounced *thi*. Before a word beginning with a consonant, it is pronounced *tha*.

If these few simple rules are kept in mind, and the general rule for phrasing followed, the song will be rendered in a very satisfactory manner.

**37. Interpretation.** Too much can not be said about correct interpretation of the song. No matter how simple it is, make it artistic. Study the words and find out what they mean. Sing the song as you would declaim the poem, with all the dramatic expression of which you are capable and for which the poem calls. Do not overdo the dramatic. Remember if the poem embodies a simple sentiment, then its expression must be simple. Too often a simple but beautiful song is spoiled by over-dramatic expression.

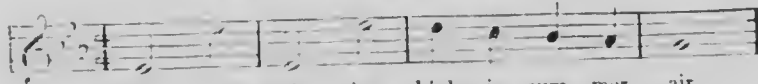
**38. Songs.** The following songs have been selected as offering a good range from the very simplest to those somewhat more difficult. With the exception of the folk-songs, these selections represent the work of some of the best composers of music for children's voices. The simplest songs have been placed first, and the songs have been further divided into scale songs, occupation songs, lullabies and unclassified

Story-Telling, Dramatization, Games, Songs 227

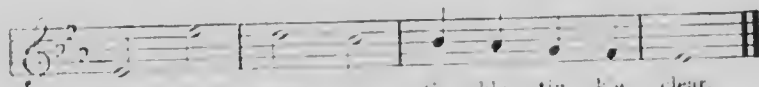
SCALE SONGS

THE FOUNTAIN

From Eleanor Smith Music Course, Book I



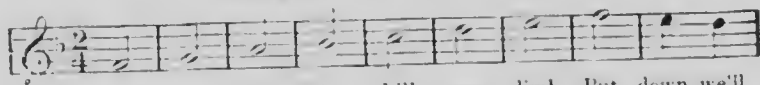
Foun - tain, spring - ing high in sum - mer air,



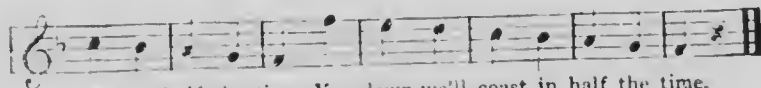
Drow - sy sweet you tin - kle, tin - kle clear.

COASTING

From Eleanor Smith Music Course, Book I



Slow - ly up the hill we climb But down we'll



coast in half the time; Yes, down we'll coast in half the time.

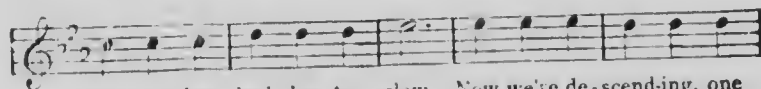
UP THE LADDER

From Eleanor Smith Music Course, Book I

HELEN GOODRICH



Now, up the lad - der we mer - ri - ly go, You need not



hur - ry, but don't be too slow. Now we're de - scend - ing, one



step at a time; Keep on the lad - der as down - ward we climb.



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## THE DREAM PEDDLER.

From Melodic First Reader

LUCY M. BLINN

*Moderately and with soft, distinct tone.*

1. Up the streets of slum-ber-town Comes the cri - er with his bell,
2. Here are dreams of fan-cies bright, Fair-ies know, but will not tell;



Call - ing soft - ly up and down, "Dreams to sell! Dreams to sell!"  
Some of day, and some of night, Dreams to sell! Dreams to sell!

## OCCUPATION SONGS

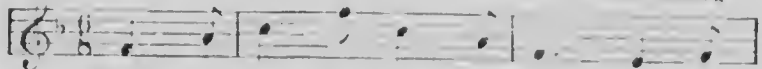
## LITTLE FARMERS

(ACTION-SONG)

From Eleanor Smith Music Course, Book I

French Game

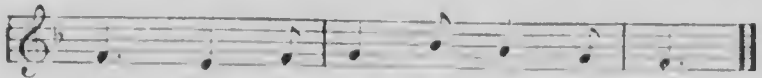
French Folk-song



1. Would you see us plow our land, plow our
2. Would you see us sow our seed, sow our
3. Would you see us cut our grain, cut our
4. Would you see us thresh our grain, thresh our



land, plow our land? This is how we plow our  
seed, sow our seed? This is how we sow our  
grain, cut our grain? This is how we cut our  
grain, thresh our grain? This is how we thresh our



land, In the ear - ly days of spring,  
seed, As the grain a - bron! we sing.  
grain, Hear our sound - ing! we  
grain, While the mer - ry thresh - ers sing.

THE THRESHERS

From Eleanor Smith Music Course, Book I

Translated from the German

Old German Threshing Song

*Allegretto.*

1. Wake, sleep-y thresh-ers, for morn-ing is here, Long since the  
2. Back-wards and for-wards with flails keep-ing time, Thresh-ers, let's

*mf*

This system contains the first two lines of the song. The vocal line is in 6/8 time and features a melody with eighth and sixteenth notes. The piano accompaniment is in 6/8 time and consists of a steady eighth-note bass line and chords in the right hand.

clock has struck three; Cocks are a-crow-ing and  
mer-ri-ly go; Joy-ous-ly sing-ing our

This system contains the third and fourth lines of the song. The vocal line continues with a similar melodic pattern. The piano accompaniment includes some chords with fermatas, indicating a slight pause in the accompaniment.

bells chim-ing clear, Winds of the dawn blow-ing free,  
work-a-day rhyme, Rain-ing good blow up-on blow,

This system contains the fifth and sixth lines of the song. The vocal line concludes with a final note. The piano accompaniment ends with a final chord.

## THE THRESHERS

Good neigh-ber Ad-am is bus-y a-gain; Hear how he's  
Till the gold hearts of our own yel-low grain Lie for our

thresh-ing his out and his grain! Clip, clap, clap, clip, clap, clap,  
glean-ing, all sweet and all clean. Clip, clap, clap, clip, clap, clap,

clip, clap, clap, clip, clap, clap. Work-ing with might and with main,  
clip, clap, clap, clip, clap, clap. Work then, with might and with main.

LULLABIES

BABY DEAR

Copyright by Jessie L. Gaynor

From "Lilts and Lyrics"

*Simply, like a folk-song.*

1. Ba - by dear, ba - by dear, don't you cry! Moth - er will  
2. Brother is driv - ing the cat - tle home From the up - land

come to you, by and by; Fa - ther is cut - ting the  
pas - ture, where they roam. Ba - by dear, ba - by dear,

hay and wheat, Moth - er is bak - ing a cake to eat.  
don't you cry! Sup - per - time's com - ing by and by.

## INDIAN LULLABY

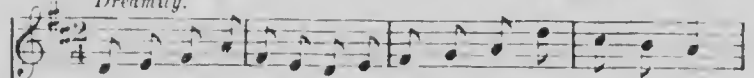
From Songs of Nature and Child Life. Vol. 1

Words adapted from Hiawatha

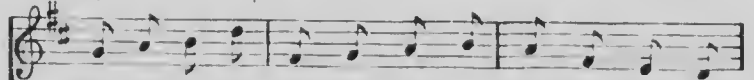
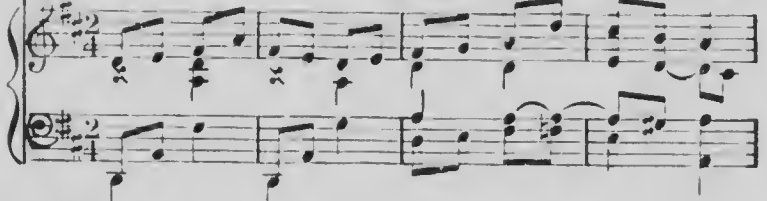
By Annie E. Moore

*Dreamily.*

Music by Mildred J. Hill



1. Rock-a-by, my lit-tle owl-et, In thy moss-y, sway-ing nest,
2. Hush-a-by, my lit-tle owl-et, Man-y voi-ces sing to thee,
3. Sleep, O sleep, my lit-tle owl-et, Thro'our tent the moon shines bright,



With thy lit-tle wood-land broth-ers, Close thine eyes and  
 "Hush-a-by," the wa-ter whis-pers, "Hush!" re-plies the  
 Like a great eye it will watch thee, Sleep, till comes the



take thy rest,  
 tall pine-tree. To-who, To-who, To-who, To-who!  
 morning light.



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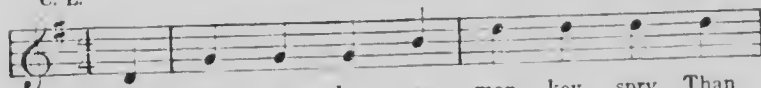
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THE CLIMBER

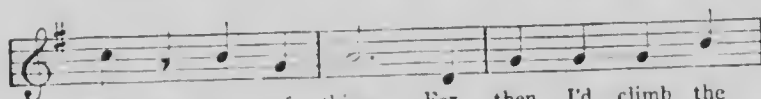
From Eleanor Smith Music Course, Book I

CAROLINE LARRABEE

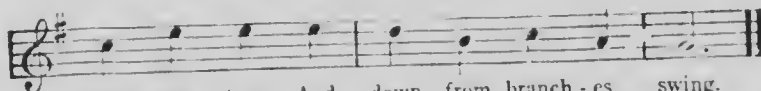
C. L.



1. I'd rath - er be a mon - key spry, Than  
2. But now, if sit - ting on a bough, Or  
3. But if I had a long hooked tail, And



an - y sort of thing, For then I'd climb the  
on the gar - den wall, There's al - ways some one  
hands in - stead of feet, There's no one that could



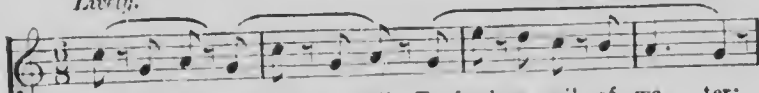
high - est tree, And down from branch - es swing,  
who will say, "Come down or you will fall!"  
pull me down, Just when I'd got a seat.

JACK AND JILL

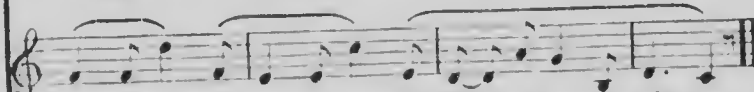
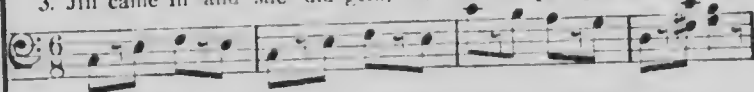
From Melodic First Reader

J. W. ELLIOTT. (Arr.)

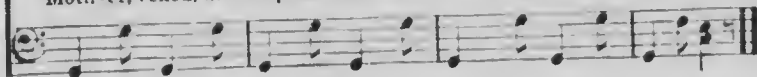
*Lively.*



1. Jack and Jill went up the hill To fetch a pail of wa - ter;  
2. Up Jack got and home did trot, As fast as he could ca - per,  
3. Jill came in and she did grin, To see his pa - per plas - ter;



Jack fell down, and broke his crown, And Jill came tumbling aft - er.  
Went to bed to mend his head, With vin - e - gar and brown pa - per.  
Moth - er, vexed, did whip her next, For caus - ing Jack's dis - as - ter.



## SING A SONG OF SIXPENCE

From Mother Goose's Nursery Rhymes

By J. W. Elliott

Sing a Song of Six - pence, A pock - et full of Rye;

*mf*

Four - and - twen - ty Black - birds Baked in a Pie.

When the Pie was o - pened, The Birds be - gan to sing;

SING A SONG OF SIXPENCE

Was - n't that a dain - ty dish To set be - fore a King?

The first system of music for the first verse consists of a vocal line and a piano accompaniment. The vocal line is in G major and 3/4 time, with lyrics: "Was - n't that a dain - ty dish To set be - fore a King?". The piano accompaniment features a simple harmonic accompaniment with chords and moving bass lines.

SECOND VERSE. *mf*

The King was in the counting-house, Counting out his mon - ey; The

The second system of music for the second verse begins with the instruction "SECOND VERSE. *mf*". The vocal line has lyrics: "The King was in the counting-house, Counting out his mon - ey; The". The piano accompaniment includes a *ten.* (tension) marking in the right hand and a *mp* (mezzo-piano) marking in the left hand.

Queen was in the Par - lour, Eat - ing bread and hon - ey; The

The third system of music for the third verse has lyrics: "Queen was in the Par - lour, Eat - ing bread and hon - ey; The". The piano accompaniment includes a *ten.* (tension) marking in the right hand.



## SING A SONG OF SIXPENCE

maid was in the gar - den, Hang - ing out the clothes; There

*ten.*

This system contains the first two staves of music. The top staff is the vocal line, and the bottom two staves are the piano accompaniment. The lyrics are 'maid was in the gar - den, Hang - ing out the clothes; There'.

*rallentando.*

came a lit - tle Dick - y Bird, And popped up - on her nose!

*rallentando.*

This system contains the next two staves of music. The top staff is the vocal line, and the bottom two staves are the piano accompaniment. The lyrics are 'came a lit - tle Dick - y Bird, And popped up - on her nose!'. The tempo marking *rallentando.* appears above the first staff and below the second staff.

## SONG OF THE SEASONS

From The Song Primer

By Alys E. Bentley

Sing a song of sea - sons, Some - thing bright in all;

This system contains the first two staves of music. The top staff is the vocal line, and the bottom staff is the piano accompaniment. The lyrics are 'Sing a song of sea - sons, Some - thing bright in all;'. The key signature has two flats and the time signature is 2/4.

Flow'rs in the sum - mer, Fires in the fall.

Copyright, 1907, by A. S. Barnes &amp; Company

THE GINGER CAT

From Melodic First Reader

MILDRED TRAVERS ANDERSON

DANIEL PROTHEOR

*With humor and precision.*

1. I had the fin - est lit - tle cat, All  
2. He was the fin - est kit - ty round, And  
3. A small gray mouse passed by the shelf, And

The first system of music consists of a vocal line in treble clef with a key signature of one flat and a common time signature. It is followed by piano accompaniment in bass clef. The lyrics are numbered 1, 2, and 3, corresponding to the three verses.

made of cake and nice and fat; With frost - ed ears, and  
had been baked and nice - ly browned, I placed him on a  
saw poor kit - ty by him - self. Wee mouse left three small

The second system of music continues the vocal line and piano accompaniment. The lyrics describe the ginger cat's appearance and the mouse's actions.

sug - ar toes, Two cur - rant eyes and a gin - ger nose.  
shelf one day, And then, a - las, went off to play.  
crumbs be - hind, - 'Twas all of kit - ty I could find.

*slower.*

*rit.*

The third system of music concludes the piece. It includes a tempo change to *slower.* and a *rit.* (ritardando) marking. The lyrics describe the mouse's disappearance and the remaining crumbs.

## KITE TIME

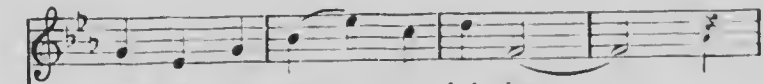
From Nature Songs for Children

Words by Jessie B. Sherman

Music by Fanny Snow Knowlton

*Waltz time.*

1. North winds do blow,      Gone is the snow,  
 2. Now for the kite,      Hold the string tight,  
 3. Now with a nod,      Curt - 'sy so odd,      To



Green is the grass in the hol - low.....  
 Mad - ly the wind is blow - ing.....  
 play with his lord - ship she's try - ing.....      No



Thro' the blue sky,      Flut - ter - ing by,  
 See how she flies      Swift thro' the skies,  
 use, lit - tle kite, You've fin - ished your flight,      Al-



From "Youth's Companion," by permission.

KITE TIME

Man - y a rob - in and swal - low, swal - low,  
Straight to the sun she is go - ing, go - ing,  
read - y the wind is a - dy - ing, dy - ing, Al-

Man - y a rob - in and swal - low.....  
Straight to the sun she is go - ing.....  
read - y the wind is a - dy - ing.....

## NATURE'S GOOD-NIGHT

From Song Stories for the Kindergarten

Words by Patty S. Hill

Music by Mildred J. Hill

Clouds of gray are in the sky, Flocks of birds are

pass - ing by, Trees now dressed in red - ed brown,

*dim.*  
Send their leaves all rus - tling down. Lit - tle flow - 'rets

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NATURE'S GOOD NIGHT

down - ward creep, Nod their drow - sy heads and sleep.

The first system of music consists of a vocal line and a piano accompaniment. The vocal line is written on a single treble clef staff with a key signature of one flat (B-flat) and a 3/4 time signature. The lyrics are "down - ward creep, Nod their drow - sy heads and sleep." The piano accompaniment is written on two staves (treble and bass clefs) and features a steady, rhythmic accompaniment with chords and moving lines.

All the world must say "good - night," Till

The second system of music continues the vocal line and piano accompaniment. The vocal line begins with the lyrics "All the world must say 'good - night,' Till". The piano accompaniment includes a dynamic marking of *pp* (pianissimo) above the staff. The musical notation includes various note values and rests, with the piano part providing harmonic support for the vocal melody.

spring comes back with sun - shine bright.

The third system of music concludes the piece. The vocal line ends with the lyrics "spring comes back with sun - shine bright." The piano accompaniment continues with a final cadence, ending with a double bar line. The overall mood is peaceful and serene, reflecting the "good night" theme.

39. **List of Books.** *Melodic First Reader.* Ripley and Tapper. American Book Company.
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- Mother Goose Melodies.* Set to music by J. W. Elliott. McLoughlin Bros., New York.
- Small Songs for Small Singers.* W. H. Neillinger. G. Schirmer, New York.
- Songs of the Child World.* Jessie L. Gaynor. John Church Company, Cincinnati.
- Fifty Children's Songs.* Carl Reinecke. Clayton F. Summy Co., Chicago.
- Song Stories for Kindergarten.* Mildred J. and Patty S. Hill. Clayton F. Summy Co., Chicago.
- Songs of Nature and Child Life.* Mildred J. Hill and Annie E. Moore. Clayton F. Summy Co., Chicago.
- Nature Songs for Children.* Fanny S. Knowlton. Milton Bradley Co., Springfield, Mass.
- Cotton Dolly and Other Songs.* Daniel Prothero. Clayton F. Summy Co., Chicago.
- Children's Old and New Singing Games.* Mari R. Hofer. A. Flanagan Co., Chicago.

### TEST QUESTIONS

1. In what way is the story *told* more valuable than the story *read*?
2. What are the essentials of a good story? Describe your method of using stories. Which class of stories named in Section 4 do you find most acceptable? Why?
3. Show how the use of the story aids the pupils in gaining power of expression. What branches besides language are aided by the use of stories?
4. Show the relation of story-telling to discipline. How can this relation be made most effective?
5. Why is it unwise to attempt to develop dramatic talent in very young children?
6. How may dramatization be related to nature study?

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7. What methods must be used to keep children in third grade interested in dramatization?

8. Give three reasons why games should be used in school. Name at least two dangers to be avoided in the use of games and show how you would avoid them.

9. Should the teacher take part in games on the playground? Give reasons for your answer.

10. Show how story-telling, games and songs develop the power of attention in pupils. Which do you consider the best for this purpose? Why?



## CHAPTER SEVEN

### FIRST YEAR NUMBER WORK

**1. Introduction.** In the discussion of number work here given, our aim is not so much to lay down hard and fast rules for the teaching of this subject or to outline definitely a course of study as to present the psychological aspect of the subject, to show the best methods of teaching numbers and to suggest various devices for the aid of the teacher. The devices used are so many and so varied that a teacher must exercise her own common sense in adopting them. If thoroughly familiar with the psychology of number, she will find no difficulty in discriminating between good and poor devices.

It is well to remember that "methods," accepted in the true sense of the word, have little value to the practical teacher. One of the easiest things in the teaching of arithmetic is the creation of "method," but a little experience proves that there is no one method that will lead to easy victory in the teaching of number. The wise teacher acquaints herself with the most successful methods employed by the most successful teachers, accepts the great underlying principles, and adapts the work to suit the needs of her pupils.

**2. Value of Number Work.** In general, we may say that the value of number work may be considered from two standpoints; first, from the standpoint of its value as a subject of practical usefulness, and second, from the standpoint of its culture value. In regard to the first, little need be said, for the value is too evident to need much discussion. In many phases of our every-day life we realize the necessity of a knowledge of arithmetic. We use it in buying and selling, in building our houses, in surveying our land, and, in short, in nearly everything we do. In regard to the second, we have only to consider the mental discipline that

results from the study of number work. Consider for a moment what every operation in number work involves. In the first place, attention is demanded; for without attention no clear, systematic work can be done. Furthermore, perception, memory, and clear, accurate reasoning and judgment are demanded. Arithmetic is, clearly, then, both a utility subject and a culture subject.

**3. Origin of the Number Concept.** Before we can consider the best ways of teaching numbers, we must thoroughly understand where we get the idea of number; that is, how the number concept originates. A child does not come into the world with the idea of number in his mind. The world he sees is a vague, underdefined mass, and he does not know that the objects he sees are six or eight or two or three. As he grows older, the word six or two conveys no meaning to his mind, neither does showing him four objects, and telling him they are four convey to him any real idea of the number four. He still sees merely the group. It is well, then, to remember that number is not a property of objects to be grasped by seeing or feeling the objects. It is nothing concrete that can be picked up and looked at, but it is an abstract idea that demands some mental activity before it can be truly grasped.

If you have ever observed little children playing about their home, you will have noticed their instinctive tendency to count; not by the names of the numbers, but counting, nevertheless. They pick out all of their square blocks and build houses; they separate nuts from candy; they count the chairs; they count their dolls; they are constantly counting by discriminating between objects of different shape or size or color. A little boy that we knew had a habit of creeping about the room, touching each tack in the carpet as he passed and saying, "One—three," "One—three," over and over. The number meant little or nothing to him, but the counting idea was in his mind. He knew that all of those tacks constituted a group of objects. He had the idea of the whole. Furthermore, he recognized each tack

as a separate, individual thing; and, lastly he realized that each tack belonged to the whole, that it was a part of the group.

In every act of counting, three processes are involved. A child first sees all of the objects as one vague whole—a unity. Later, he notices the separate objects that make up this group. Finally, he puts the separate objects together and once more makes up the whole. To these three processes, or mental activities, psychologists have given names. The first they call synthesis, from two Greek words meaning *to put together*. It must be understood that this synthesis is very vague and not a conscious process. It is simply recognition of a lot of things as one vague mass. The next step is called analysis—the taking apart, the separating of a whole into its parts. The third is synthesis again—or the final putting together of the parts belonging to the whole. It must not be thought that a child does this by any conscious effort on his part. It is instinctive with him, and therefore gives a true psychological basis for a method of number work.

We have seen the processes involved in getting the number idea, but it may not be clear to all why these processes arise.

It is universally conceded that the idea of number arises from the mind's activity in measuring quantity. To illustrate, a child stretches out his hands for the moon and cries because he cannot get it. He has no idea of distance, in short, no idea of quantity, for the nearness and farness of objects are quantitative ideas. As a child grows older, he begins to discriminate. He does not reach for something on the other side of the room, because he knows he cannot get it. He has measured the distance. A little child in making mud pies picks out small stones for cherries or raisins. He discriminates between stones of different size and shape and chooses the number he wishes. Here again, the idea of measure comes into play, for he is measuring his means to fit the end. As the child grows older, he becomes

more and more discriminating. He learns to choose just the amount, just the size, just the color, just the softness or the hardness he wishes. He has a definite aim in view, and he measures or chooses his materials and plans accordingly. It is exactly this nice adjustment of means to an end that gives rise to number. We measure a thing, at first, vaguely, indefinitely. Later, we learn that vague measurements mean loss of time and energy, for what we have done is not right and has to be done over again; consequently, we learn to be exact, to search for exact measurements. Here we turn to numbers for aid, for through them we attain accuracy.

In this process of measuring, of getting quantitative ideas, what mental processes have been involved but the same ones of analysis and synthesis? The child in picking out his cherries for his mud pies, studies the separate pebbles. He separates all the pebbles he sees into pebbles of different size or shape; that is he analyzes. Furthermore, he puts together all the pebbles of one kind and calls them cherries. He constructs again the group, the whole, the unity. In other words, he synthesizes.

We have seen now what mental activities are involved in the origin of the number idea and how the number idea itself arises from the mind's activity in measuring quantity.

As we become more and more familiar with number and its meaning, we realize that the idea of number arises from this quantitative measuring. What would our idea of a lot fifty by a hundred feet be if we had no idea of a foot or some such unit by which mentally we could measure the lot? What should we know of the value of a thousand dollars if we knew nothing of the value of the unit of measure, one dollar? We are constantly measuring in just this way—estimating the worth of a whole by referring it to some known unit of measure.

From this fact, we get a certain foundation for our methods in number work.

**4. Methods in Vogue.** Two methods of teaching are in vogue in most schools, a method which deals with figures and symbols alone and a method which deals with objects alone. Often the two are combined. Let us examine these two methods in turn. The first, which is rapidly going out of use, deals with number symbols alone and consists in requiring the performance of various operations by means of figures. Addition, subtraction and the other arithmetical operations are carried on in a mechanical way without regard to what figures or processes signify. In the second method, objects are used, and it is taken for granted that the concept of number will arise from merely observing or handling the objects, whereas it only arises from the mind's activity in adapting certain things to a certain end in view. There must be constructive activity before the number idea is grasped.

In the psychological method, which is the true method, account is taken of this constructive activity of the child, this measuring, this suiting of the means to the end that brings one to the need of exact ideas of quantity— in other words, to the need of number. Accordingly, we must base our method of procedure upon it. We must not thrust unmeaning numbers upon the child, but rather lead him to feel the need of them. Let him feel the relation which numbers bear to objects and he will, in time, unconsciously grasp the abstract idea of number, if we wisely direct his natural, instinctive activity of measuring.

**5. Ground Usually Covered During the First Year.** Most children upon entering school have some idea of number. Many of them can count; nearly all can count to five, at least. During their first year their number work consists mainly of measuring. In some schools no definite period is given to number work during the first year, but the work is done incidentally in connection with other studies. In the majority of schools, however, the child by the end of the first year is expected to be able to combine and separate numbers to ten or twelve; to comprehend the fractions  $\frac{1}{2}$ ,

$\frac{1}{4}$  and  $\frac{3}{4}$ ; to have a knowledge of such forms as squares, oblongs, prisms, triangles, cylinders and circles. In some schools he is supposed to be able to read and write numbers to one hundred. Upon the whole, this does not seem too much to expect of a bright child.

**6. Plan.** Teachers—inexperienced ones, especially—are often at a loss to know how to start children in number work. It is always necessary to find out at the beginning how much the pupil knows. This can easily be done in connection with other work. For instance, ask one little beginner to count the children in his class to see how many pencils will have to be distributed. If he can count only to three, ask some one else to go on. Ask another to get you two pieces of crayon from the box on the shelf; another to pass three pairs of scissors. In this way, without the children's being conscious of the fact, the teacher can find out just how much each child knows and can plan her work accordingly.

**COUNTING.** Much of the work in counting can be carried on incidentally in connection with the work in reading, spelling, language, etc., and used as a device to secure and hold the child's interest and attention.

The teacher wishes to send a beginning class to the black-board to write words. To gain attention she may say, "One little boy pass to the front board. Two girls pass to the side board. Three boys and one girl to the back board." Then ask quickly, "How many at the front board? How many girls standing? How many boys at the back board?" Children are very fond of this kind of work, and one or two minutes of the recitation period can be very profitably spent impressing the idea of number.

For the first few lessons, it would be well not to introduce numbers at all. Let the lessons consist of measurements and let the results be expressed indefinitely, that is, expressed without the use of numbers.

**7. Illustrative Lesson.** (a) LESSON IN MEASUREMENT.  
*Purpose:* To familiarize the class with the measurement

expressed by the words *taller, shorter, longer, larger, smaller, wider, more, less, etc.*

*Material.* A table, oblongs of different sizes, and cubes, with possibly a few triangles or spheres for ornamentation. If the teacher cannot get the blocks, she can easily make substitutes from paper. The older children can very well make them for her in their construction work, but only perfect ones should be used.

*Method.* The teacher may introduce the lesson by saying, "How many of you have ever seen men building fences?" (Many say they have.) "How many have seen men build fences of stone?" (A few.) "Well, this morning we are going to build a stone fence here on this table, which we shall call a yard. Our fence is to be just this long (showing a twelve-inch ruler) and we shall use these blocks for stones. John, what kind of stones do you think it will be best to use first?"

"The heaviest ones."

"Which ones do you think would be apt to be the heaviest?"

"The largest ones."

"Dorothy, pick out the largest ones." (The largest are two-inch oblongs.)

"Class, has she picked out the right ones?"

If she has not, the blocks must be measured and the smaller ones discarded.

"Frank, you may lay the first stone."

Frank places it.

"Willie, find another just as large as Frank's and put it in its place."

Several stones are laid, possibly seven or eight.

"How long were we going to have our fence?"

"As long as this ruler."

"Is it as long?"

They measure.

"It is longer."

They remove as many blocks as necessary.

"Now, we want our yard as wide as this." (Show stick or strip of paper ten inches long.)

The fence is laid accordingly until it is complete, the children measuring to get it exact. Room is left for a gate.

The children also measure to see how much longer than wide the fence is, giving the answer, "So much longer," or, "One block longer."

"Now let us choose smaller stones for our next row."

The stones are selected.

"Do you suppose we shall need more or less than in our first row?"

If the children say less, or seem to be merely guessing, the teacher says, "We shall see when we get through," being sure to do so afterwards.

The second row is laid.

"Let us make our top row of the smallest stones of all."

The children choose the smallest stones

"Shall we need more or less stones than we did for our second row?"

"More."

"Let us make our gate as pretty as we can. We will make the posts taller than the fence."

The gate is made.

"How much taller are the posts than the fence?"

The children measure and express the result indefinitely; as, "So much," or, "This block and this block taller." The children ornament the posts, and possibly the fence, with the odd-shaped blocks. During the making of the gateway, the question of width can be brought in, making the children familiar with the terms *wider* and *narrower*.

"Let us make a fence around another yard, longer and wider than our first."

The fence is readily constructed, the first being left for comparison. During the course of the lesson the teacher can tell the class that the largest blocks are called oblongs. The cube also may be called by name. Later, prisms, triangles, spheres, etc., may be introduced and the names



given. The knowledge of form may be taught in construction work and drawing, as well.

During the construction of the fence it is more than probable that some child will count the blocks. This is very good, but no special stress need be laid upon the fact, as the lesson is simply to measure and compare.

These same measurements may be carried on in various ways. Children may measure each other or objects in the room, and also the number of windows or pictures. There are more windows than doors. How many more do not matter just at present. The children will soon feel the need of number, for they will want to know just how much taller John is than Sue, how many more marbles Harry has than Will, how much longer Ruth's fence is than Tom's. They will want a shorter and better way in which to say that Ruth's fence is *one block and one block and this much longer than Tom's*. When they feel this need, then they are ready to deal with number.

(b) DEVICES FOR COUNTING. (1) *Teaching the Names of Numbers.* To impress further the need of number names, devices somewhat as follows may be used: Let the children construct a soldier's tent of two toothpicks. Tell them to put a floor in it. They cannot until they have another toothpick. When asked how many they need for a tent with a floor, they say *one* and *one* and *one*, or *two* and *one*. The teacher then can give the number *three* as a better and easier way of saying *one* and *one* and *one*, or *two* and *one*. In the same way *four* and *five* may be introduced, the teacher being sure to make clear that *five* is really *one* and *one* and *one* and *one* and *one*, or *two* and *three*, or *three* and *two*, or *two* and *two* and *one*.

(2) *Counting by Groups.* Not only must the children count by *ones*, but they must also count by *twos* and *threes*, etc. How many groups of two sticks have they? How many groups of three boys in the room? How many twos in the group of soldiers on the board? Let them count the same quantity by different groups. For instance, if they

have twelve colored discs, let them find the twos in twelve, the threes, the fours and the sixes.

Such exercises are interesting to children, and the knowledge secured in this way is more than one would at first suppose. To count by 2's from 2 to 10 and from 1 to 11 has the pleasure of any rhythmic sequence and at the same time gives the addition tables of 2's, the counting by 2's from 2 to 20 gives the corresponding multiplication tables.

Similarly, counting by 3's from 3 to 30 gives the multiplication table of 3's, while the counting from 1 and 2 to 13 and 14 gives the different addition combinations.

In counting exercises have much concert work. In this it is well to have a member of the class lead, whose business it is to place a time limit, and to correct mistakes. If the class is counting by 2's, and someone says, 2, 4, 6, 9, the counting should cease and the leader say, "There is no 9 in the table of 2's." Carry every counting to ten times the number with which you started.

(3) *Number Pictures.* In connection with this counting work, the results may be represented on the blackboard by means of dots or circles; as,

○; ○○; ○○○; ○○○○; ○○○○○; ○○○○○○; ○○○○○○○; ○○○○○○○○; ○○○○○○○○○

These results may be represented on cardboard, using colored paper discs. A great deal of rapid work may be done with them. For instance, the teacher shows the card, covers it quickly and asks how many oranges or apples, or whatever the discs represent, were seen. She covers one and asks for the number left. She covers two or three and asks, "How many are left?" "How many were on the card?" "How many are covered?" "We saw five and covered one. Five less one are how many?" The questions may be varied endlessly.

When giving the child the idea of a number, as five, for instance, he should, as far as possible, become acquainted with ○○○○, the number of objects; *five*, the word; and

5, the figure. These three symbols should always be connected.

(c) CORRELATION OF NUMBER AND LANGUAGE. It must be remembered that no extreme of method should be adopted by any teacher. To measure everything in sight, to base all arithmetic on sticks or blocks or paper figures, to get into any narrow rut whatever, is to fall short of the best teaching and to narrow the horizon of the children in our care.

The work in language and arithmetic may be combined, when the aim is to familiarize the class with measurement expressed by the terms *larger*, *smallest*, *heaviest*, etc.

*Material.* Procure bins of various sizes, boxes, crayons of different lengths, or make use of any like available material.

*Method.* The teacher may introduce the language lesson with a talk concerning size, shape, color, etc., of material at hand. She can then ask questions which call for the use of the terms *largest*, *heaviest*, *smallest*, etc. For instance, she may ask, "Who wants the largest ball?" "To whom did I give the smallest ball?" "John, I and the smallest ball to the tallest girl in the class." "To whom did you give the smallest ball?"

At first the child will want to answer your question in a single word and when the question, "Who wants the largest ball?" is asked, he will probably say, "Me." Tell the child how you wish to have the question answered, the ability to answer in a complete sentence is a matter of habit, and after a few suggestions he will express his thought in complete sentences.

An exercise to teach correct use of *I* when used in connection with the verb *is*, and at the same time familiarize the class with the measurement expressed by the terms *heavier*, *heaviest*, etc., is given below:

The teacher may hand the heaviest ball to Mary and tell her to roll it on the floor. Then she may ask, "Who rolled the heaviest ball on the floor?" The child is expected to answer, "It was I who rolled the heaviest ball on the floor."

(d) LESSONS TO CULTIVATE ABILITY TO JUDGE MEASUREMENTS. *Material.* Pint, quart and gallon measures, with pails of various sizes.

*Method.* The teacher begins by asking the children how many of them have ever gone to the store to buy vinegar or molasses or oil, in response to which many answer that they have done so. Then the teacher may say:

"How much did you ask for?"

Perhaps the children may answer "a jugful," or "ten cents' worth," or "a pint," "quart," etc.

The teacher may continue the conversation somewhat as follows:

"What did the storekeeper do then?" (Various answers.)

"Well, how does he know how much to put in? If you ask for a pint, how does he know when he has given you a pint?"

"He measures it."

"I have a measure here that the storekeeper uses in order to give us just the quantity we want. Does any one know how much it holds?" "Well, it holds one pint."

"Now, this morning we are going to buy and sell vinegar and molasses. Can any one think of anything else we measure by the pint, so that we can sell that, too?" (Oil, milk, syrup, etc.)

"Very well, we shall buy and sell all of these." "Frank, I should like to get a pint of oil from you this morning. Here is my can to put it in." (Frank measures out a pint of water.)

"But I do not like that kind of a pint. The measure was not full and then you spilled some."

(The children thus learn to be careful.) "Mary, sell Tom two pints."

"Sue, sell Henry half a pint." "Sell Will three pints, Ruth."

"Now, here is a larger measure that the storekeeper often uses (showing a quart cup). Does any one know how much this holds?" (Possibly some one knows the name *quart*. If not, it is told.)

"Which is the larger, the quart measure or the pint measure?"

"The quart measure."

"Which one will hold the more, then?"

"The quart measure."

"Is there any way we can find out how much more it holds?"

"Measure and see."

"How are you going to do it?"

"Fill the pint cup and pour the water in the quart cup and see how many pints it holds."

This is done, the children discovering that the pint cup has to be filled twice.

"How many pints did you say the quart cup holds?"

"It holds two."

"How many quarts?"

"One."

"Then how many pints in one quart?"

"Two."

"Tell me in a complete sentence."

"There are two pints in one quart."

"I should like to buy one-half of a quart of vinegar. Who can sell it to me?"

It is measured out.

"Find out how many pints that is."

A child measures.

"I want some one to tell me in a complete sentence what we have just found out."

"A half of a quart is one pint."

"How many pints in a whole quart?"

"Two."

"How many quarts in two pints?"

This may necessitate measuring again before the children discover that they already knew it.

"Now, here is another measure (showing a two or three quart pail). I want you to think a moment and then tell me how many quarts you think it holds. You may each whisper the number to me and then we shall find out who is the nearest right."

The children think and whisper the answer.

"Well, some say two, some three and some four. What shall we do?"

"Measure."

"Mary, you may measure."

Mary measures, the children keeping count. Pails of various sizes are used, the children each time estimating the amount the pail holds and then proving their estimates. In this way they rapidly learn to judge quantity.

Problems like the following may be introduced:

(1) "Mary, take one pint of vinegar." "Bessie, give her one more." "Class, how many pints has she now?" (Two.) "How many quarts?" (One.)

(2) "Tom, sell for a quart of milk." "Robert, sell her a pint." "How much milk has she now?"

"A quart and a pint."

"How many pints is that?"

"Three pints."

"How many quarts is it?"

"It is a quart and one-half."

(3) "If Sue has three pints of vinegar and buys two more, how many pints will she have?" "How many quarts?"

Various examples may be given, the actual measurements being taken whenever a child does not know the answer. The lessons should proceed until the children know that two pints make one quart, four quarts make one gallon, and can rapidly think gallons into quarts or pints, and *vice versa*. They should know also that eight pints make one gallon; four pints, two quarts; two quarts, one half gallon, etc. Dry measure may be taught in the same way.

*Caution.* Take plenty of time with this work. Do not do the thinking for the children, but throw them back on their own resources and make them find the answers for themselves. Too much emphasis cannot be laid upon the fact that the actual measurements must be made until they are no longer necessary. In all cases insist upon exact measurements.

(c) LESSON TO SECURE RAPIDITY AND ACCURACY IN THE COMBINATION AND SEPARATION OF SMALL NUMBERS.  
*Material.* Cents, five-cent pieces, materials for a store, which may be a grocery, dry goods store, art store or any other. When it is practicable, it is well to have small quantities of the actual materials. Money made from cardboard will do very nicely for this work. Cut circles from cardboard and mark them to represent different denominations. Paper money can also be secured from any kindergarten supply house.

*Methods.* The teacher begins by asking if any one knows why we have to pay for the things we buy at the stores. This will lead to quite a discussion, bringing out the fact that the articles were produced by hard labor, that the money to buy them was produced likewise, and consequently the seller wants to get what his goods are worth and the buyer wants to get the worth of his money. This will give a reason for being exact in making change. Then the teacher may say, "We are going to play store this morning and Joe may be storekeeper. If he makes a mistake in giving change, some one else may be storekeeper. Before we begin let us talk for a moment about the money I have (shows pennies). You all know what these are called, but I wonder how many know what this is (showing a 5-cent piece)."

Nearly all do.

"Can any one tell me how many cents it equals?"

Some one will probably know, but if not, the teacher tells.

"Now I need some pencils this morning. I want two and they cost a cent apiece. John, take this money and buy them for me. Before you go, tell us how much money you have."

He has four cents.

"While John is buying the pencils, let us be thinking about how much he will have to pay, so that we can tell if he brings back the right amount."

John buys the pencils and returns with the money he did not use. The children are asked whether or not the

amount is correct. Several are sent with various amounts and buy various articles, the class always examining the change. Some one is given five cents to buy a three-cent ball. If he accepts the wrong change, he is told to go back, take as many cents as the coin is worth, and try again. Then he is sent once more with the five-cent piece. To prevent the storekeeper's having to do all of the thinking in making change, the child buying is often asked to tell how much change he will get. When the children can make change rapidly and easily, simple problems are given and solved without the use of the money. This is done rapidly, but if a child makes a mistake he must take the money and buy the articles.

The problems may be like the following:

(1) John had four cents and spent two. How many did he have left?

(2) One pencil costs five cents and a ball three, how much will they cost together?

(3) If Sue had five cents, and her mother gave her two cents, how many cents did she have?

As soon as the children are ready for it, two five-cent pieces may be used, the fact that they equal ten cents being firmly fixed by counting. Problems involving the addition and subtraction of numbers from one to ten may be performed. Quarters and half-dollars may be used later, though the pupils below the third grade cannot and should not be expected to master the addition and subtraction facts involved. They may use numbers to twelve, or even fifteen, and may learn to count by twos, fives and tens, but do not expect them to know that nineteen and six are twenty-five or twenty-five less eleven are fourteen.

*Caution.* Remember that rapidity and accuracy are to be sought as the basis of future work. Use objects until the number facts are clearly seen, then give rapid drills.

Teach the children to make change as the business men of today make it, always naming the amount purchased, then adding the required amount of change.



(f) **THE USE OF CHARTS.** A teacher who is skilful in the use of chalk can secure excellent results in teaching easy number facts by simply stepping to the board and with a few strokes illustrating the number stories. For one who has not this skill, charts will prove of assistance. They may be made with but little time and expense, and require little skill in their making. (See Volume Two, page 313.)

The purpose of the chart on page 261 is to teach the number facts connected with seven. Stories may be told concerning each picture. At first the teacher may tell them, but later on, as the children grasp the idea, they will take great pleasure in telling the stories themselves. The following will serve as suggestions for these stories:

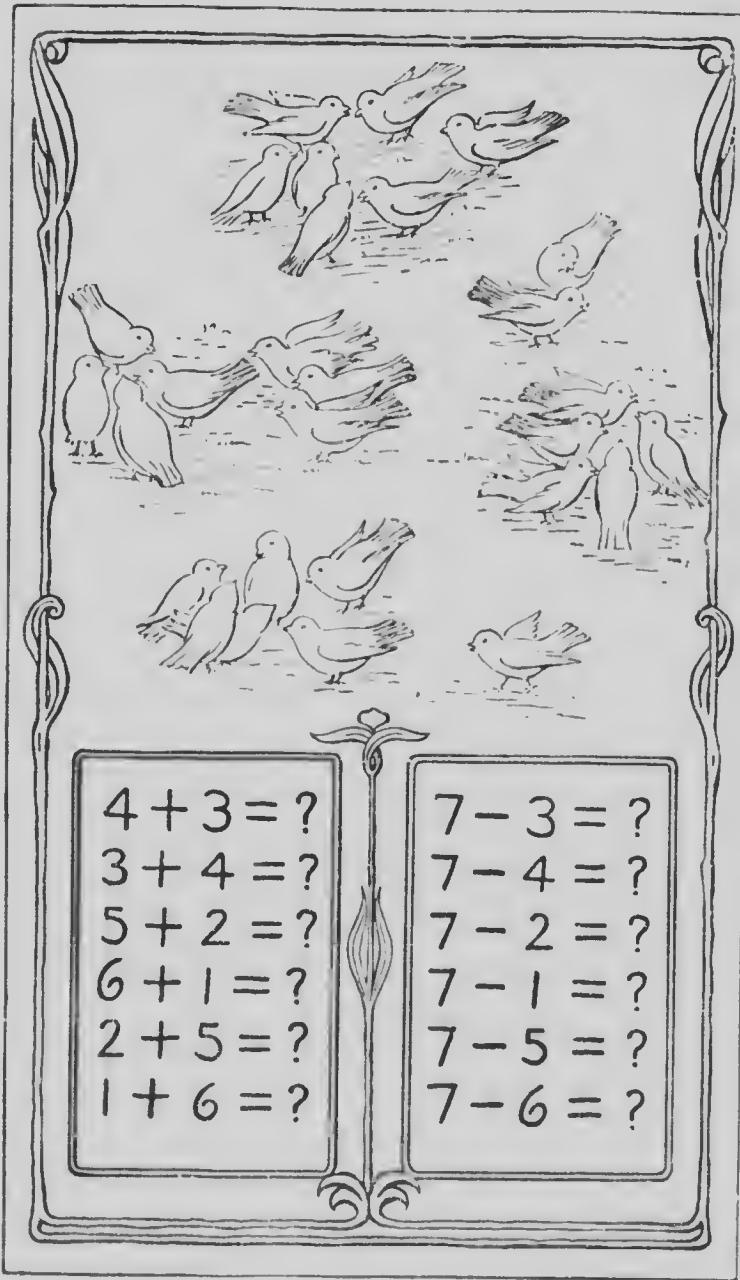
By way of introduction the teacher may say, "One morning, happening to look out of the window, I saw some little birds in the yard. There were this number of birds (pointing to the first picture). How many were there, Belle?"

"Seven."

"As I watched them, four went over in the corner of the yard and found some wheat (pointing to the second picture). How many were left? In a few minutes they came back and then five went over to the other corner of the yard and seemed to be talking together. How many were now left?"

The story may continue in this way, using all of the pictures so as to bring in the number facts. The story may be a continuous one, bringing in all of the pictures, or separate stories may be told for each picture, care being taken not to let the number aim of the lesson be lost sight of in the story telling. Each picture represents an addition fact and a subtraction fact. When the children have grasped these facts, the drill work as illustrated by the problems below should follow. These charts with their little problems furnish good seat work when the children have learned to make numbers.

Number cards, which can be purchased of any kindergarten supply house, are very good for children to use in



$4 + 3 = ?$

$3 + 4 = ?$

$5 + 2 = ?$

$6 + 1 = ?$

$2 + 5 = ?$

$1 + 6 = ?$

$7 - 3 = ?$

$7 - 4 = ?$

$7 - 2 = ?$

$7 - 1 = ?$

$7 - 5 = ?$

$7 - 6 = ?$

telling number stories. At first it is desirable to have the children simply copy the number stories from the black-board. In this way the correct form and answers are being constantly impressed upon the child's mind. Later, he may copy the examples and place the correct answers for himself.

The number cards may also be used for counting by 2's, 3's, 4's, etc.

The children will also enjoy making little picture charts of their own to illustrate number facts. In place of birds, they can draw balls or haystacks or trees, or any objects that can be made with a few simple lines.

By the end of the first year the children should know well the simpler combinations, such as  $4 + 4$ ,  $3 + 2$ ,  $2 + 2$ , etc., and their corresponding subtraction tables. For drill on this work use cards made of tag board, cut in a convenient size to hold in the hand. Print the numbers large enough to be seen across the room, and do not indicate on the card whether the numbers are to be multiplied, subtracted or added. If you wish to have a drill in addition, tell the children they are to add the numbers, etc. The form of the card should be somewhat like the form shown below.

(g) LESSON IN WRITTEN WORK. In introducing this lesson, the teacher may say: "We have been playing store quite a long time and have been learning to make change. This morning we are going to find out how to write some of the things that we have learned. Who can show me on the board how many balls I have (holding up one)?" Doubtless some child can. Then the teacher may continue the conversation: "You may all show me." They all write 1.

"Can any show me how many I have now?" (Holds up two.) No one can do so.

"Very well, I will show you. The teacher writes the figure 2, leaves it a moment, erases and asks the children to write it. It may be necessary for her to write and erase several times before the children can make the figure.

5
5
—

"John bought a pencil for one cent and an apple for one cent. Show me on the board how many cents he spent."

"Mary had two cents and spent one. Tell me on the board how many cents she had left."

In this same way, the figures to ten are taught. In later lessons the signs *plus* and *minus* are introduced.

Many lessons need to be given during the year whose aim is to teach the children to write neatly and correctly such numbers as they are called upon to use daily. The 2, 5, 6, 8 and 9 need especial attention and drill. When a child has great difficulty in making a number, take his hand and help him to make it.

(h) LESSON ON HALVES, THIRDS AND FOURTHS. *Material.* It is of little importance what material is used to make the work in fractions concrete; sticks, paper folding, clay cubes or any material on hand will suffice for the purpose. The teacher may use strips of paper twelve inches long. Give two strips of paper to each child.

*Method.* In presenting the work in fractions it is well to remember that a fraction, as  $\frac{1}{2}$ , is used in three distinct ways. These ways are as follows: (1)  $\frac{1}{2}$  of a single thing, the most natural idea of all—the breaking of a thing into 2 parts; (2)  $\frac{1}{2}$  as large, as where a 1-inch block is  $\frac{1}{2}$  as long as an 8-inch block; (3)  $\frac{1}{2}$  of a group, as in the case of  $\frac{1}{2}$  of 16 children. A variety of problems should be given the children, so that little by little all three notions become familiar to them.

To open the lesson the teacher may tell the children that they will do some measuring with their paper rulers. She tells each one to take the strip of paper and fold it exactly in the center. This is done. Then the teacher continues: "Into how many equal parts have you divided it?"

"Two."

"One of these parts is one out of how many parts?"

"One part is one out of two."

"This is how we express one out of two  $\frac{1}{2}$ " (writes it

on the board). "We call it one-half." "Show me  $\frac{1}{2}$  of your ruler." "Show me  $\frac{2}{4}$ ." " $\frac{2}{4}$  is what part of the ruler?"

"Now take these toothpicks and divide them into two equal parts." (Gives each child four toothpicks.) "Show me  $\frac{1}{2}$ ." "Show me  $\frac{2}{4}$ ." "One of these parts is one out of how many?"

"You may now take your other ruler and fold it into three parts."

This is done.

"One part out of these is one out of how many?"

"It is one out of three."

"If we express one out of two thus (writing  $\frac{1}{2}$ ), who can show me how to express one out of three?"

If no one can tell, the teacher writes it.

"We call it one-third. Each part is  $\frac{1}{3}$  of the whole." "Show me  $\frac{1}{3}$  of your ruler." "Show me another  $\frac{1}{3}$ ." "Another." " $\frac{1}{3}$  and  $\frac{1}{3}$  are how many thirds?"

"Two-thirds."

"Show me  $\frac{2}{3}$  of your ruler." "Show me  $\frac{2}{3}$ ." "What part of the ruler is  $\frac{2}{3}$  of it?" "If we express one out of three parts thus (writing  $\frac{1}{3}$ ), how can we express two out of three parts? By putting 2 in place of 1."

One-fourth may be taught in the same way, and the fact that  $\frac{2}{4}$  are the same as  $\frac{1}{2}$  brought out. Finally, develop the fact that  $\frac{2}{4} = \frac{3}{6} = \frac{1}{2}$ .

(i) LESSON IN MULTIPLICATION. *Material.* Toothpicks, blocks, paper discs. Each child has six toothpicks with which to begin.

*Method.* The teacher begins by asking the children to count the toothpicks they have, to which they respond by saying:

"1, 2, 3, 4, 5, 6."

"Count them by twos."

"2, 4, 6."

"How many groups of twos have you?"

"We have three."

"Then three twos are how many?"

"Three twos are six."

"How many times must we take two to make six?"

"Three times two are how many?"

"Three times two are six."

"Put your toothpicks together again." "Now put them into groups of three each." "How many groups of three have you?"

"Two."

"How many times must you take a group of three to make six?"

"Two times."

"Then two times three are how many?" "Six."

"Three twos are how many?" "Six." "Two threes?" "Six."

"Take these orange-colored discs and count them." (The teacher gives each child eight.) "How many have you?"

"Eight."

"Divide them into groups of four. How many groups have you?"

"Two."

"Tell me how many times we find a group of four in eight."

"Two times."

"Then two times four are how many?"

The children may have to count and see.

"Now separate your eight into groups of twos. How many twos have you?"

"Four."

"Four twos are how many?"

"Eight."

"Four times two are how many?"

"Eight."

"Two times four are how many?"

"Eight."

"Two times two are how many?"

"Four."

"Three times two are how many?"

"Six."

"You may write that at the board."

The children write *3 times 2 are 6*. If they have not had the word *times*, the teacher will have to show how to write it. Later, the teacher may tell the class that there is a shorter way of writing *times* and show them the sign  $\times$ . The sign  $=$  may be substituted for *are*.

"Now we are going to make what we call a multiplication table. I shall begin it for you." Writes:

$$2 \times 2 =$$

$$3 \times 2 =$$

$$4 \times 2 =$$

"John, you may tell us what this one equals." (Point to the first.) She writes the answer when John says "four." The other answers are given and written.

"I should like to have you all learn this little table now, and then when we want to know how many four times two are we shall not have to stop and add by twos, but we will think of our table and know at once."

The perception cards recommended for work in addition and subtraction may be used to great advantage in drill on multiplication tables.

Even in the first grade, and still more in the succeeding years, a time limit should be set on all drill work. Within reasonable limits it has been observed that rapid calculation contains fewer errors than very slow work. For this reason an effort should be made on the part of the teacher to encourage rapid work by the children.

*Caution.* While multiplication has its beginning in addition, it is not like addition, even when the addition of equal numbers is considered. In addition, the whole (sum) is obtained by building on parts. In other words, the whole is an aggregate of parts that have been put together one by one; as, 9, 6 and 5 are 20; or 19 and 1 are 20. In multiplication, however, the mind by the powers of imagination and reason, passes directly from the consideration of a

certain number of given units to the whole (product) formed by these units. By the process of addition, 6 is 2 more than 4. By multiplication, 6 is 3 times 2. Multiplication includes the factor, or times idea, and psychologically is a long step in advance of addition. In addition, the child considers the whole and the part added to it, as the 4 and 2 in 6. In multiplication, he considers the relation of the three 2's to this whole.

(j) LESSON ON THE USE OF THE RULER. As early in the year as it is practical, it is well to spend a few lessons on the use of the ruler. The teacher must explain the inch to the child and let him count the number of inches in his ruler. Let him measure his books, his pencils and other objects. Let him also construct a paper ruler of his own. When he has become thoroughly familiar with the inch as a unit of measure, show him the half and quarter inches and let him measure objects and construct another ruler showing halves and quarters. When using the inch as a unit of measure, explain to the children that we call it a *unit of measure*. The use of the term may be made familiar to them in this way: "We measured this book to find out the number of inches in it. We said that one inch was the unit of measure. Suppose we measure the desk to find out how many feet there are in it. What is the unit of measure?" "What units of measure does a storekeeper use in measuring vinegar?" "In weighing butter?" "In selling potatoes?" "How many hours in a day?" "What unit of measurement is used?"

(k) LESSON IN COUNTING BY TENS. *Material*. Toothpicks and rubber bands.

*Method*. "We are going to learn to count by tens this morning. What shall we let our toothpicks represent?"

"Sticks of candy."

"Very well, you may count your sticks of candy."

"There are twenty."

"Count out ten and put a rubber band around them."





ONES	TENS	TWENTIES	THIRTIES	FORTIES	FIFTIES	SIXTIES	SEVENTIES	EIGHTIES	NINETIES	HUNDREDS
ZERO	10	20	30	40	50	60	70	80	90	100
1	11	21	31	41	51	61	71	81	91	
2	12	22	32	42	52	62	72	82	92	
3	13									
4	14									
5	15									
6	16									
7	17									
8	18									
9	19									

"Who can tell us at the board how many sticks in the bundle?"

A child writes 10.

"Count out another ten and put a band around them."

"How many tens have you now?"

"Two tens"

"If we write one ten thus (pointing to the board), how shall we write two tens?"

A child writes it.

"In two bundles of tens how many sticks of candy are there?"

"Twenty."

Thus by counting and placing in bundles of ten, the other tens are taught. In the first lesson the children can probably reach forty. The teacher should see that every child realizes by actual counting that four tens are forty. After the tens are learned they may serve as the basis for a number chart such as is shown on the opposite page.

Have the children fill in all the blanks. Let them read across the page and down the page. After they have become familiar with the name units and are familiar with tens, say to them, "In eleven there are eleven units, or one ten and one unit. In twenty-two there are twenty-two units, or two tens and two units. In thirteen, how many units? How many tens and units? In fourteen? How many tens and units in these numbers?" (Write 20, 30, 40.) Let the children then read across the page, thus: 12, one ten, two units; 22, two tens and two units, 32, three tens and two units; 42, four tens and two units, etc.

*Symbols.* Teachers need to be impressed with the idea that children should visualize symbols that they will need in practical calculation. It is better to drill on

$$\begin{array}{r} 5 \quad 10 \quad 5 \\ + 5 \quad - 5 \quad - 2 \\ \hline 10 \quad 5 \quad 10 \end{array}$$

than upon  $5+5=10$ ,  $10-5=5$ ,  $5-2=10$ , since the latter are never used in calculation. It is well to acquaint the children with the horizontal arrangement, but the perpendicular arrangement is the one which should appear most often before the eye.

*Caution* In all of the number work as outlined in the

preceding illustrative lessons, the teacher must bear in mind that every direction which she gives must be exact; otherwise, the children will be confused and little good will be obtained from the exercises.

**8. Correlation of Number Work with Other Studies.** In teaching primary number, a great deal can be done in connection with other studies. Number work may be correlated with nature study, reading, drawing and construction work, games, music, and, to some extent, with every other subject. To illustrate, in construction work, accurate measurements must be used, in science, measurements to show the growth of buds and twigs are taken; flower charts and bird charts are made, necessitating measuring and numbering; the children learn to read the thermometer and tell time; in reading, Roman numerals in connection with the lesson are learned, and the children learn to tell the number of the page. A thoughtful teacher soon becomes skilful in correlating number work with other subjects.

**9. Aids.** (a) **BOOKS FOR TEACHERS.** Of the many books on number work to be recommended for the teacher's use, the following are among the best.

*Rational Elementary Arithmetic* Belfield & Brooks Scott, Foresman & Co., Chicago.

*Werner Arithmetics*, F. H. Hall. Books I, II and III. *Teacher's Handbook, Arithmetic Primer*, American Book Co.

*Primary Public School Arithmetic*, Teacher's Edition, McLellan & Amos, Macmillan Company.

*Public School Arithmetic for Grammar Grades*, Macmillan Company.

*A Primary Arithmetic*, For Teachers, William W. Spect, Ginn & Co.

(b) **NUMBER GAMES.** In the history of the world more people have learned elementary number through number games than in the public school. While it would be easy to go to a dangerous extreme in this matter, the play element ought to be utilized to a great extent in teaching arithmetic to primary grades. A brief bibliography of games available for number work is as follows.

*Education by Play and Game*. George Ellsworth Johnson. Ginn & Company

*One Hundred and Fifty Gymnastic Games*. S. A. Harper. G. H. Ellis Co., Boston.

*Games and Songs of American Children*. W. W. Newell. Harper & Brothers, New York

*The Book of Indoor and Outdoor Games*. Kingsland. Doubleday, Page & Co.

### TEST QUESTIONS

1. Why is it necessary for the teacher to understand the psychology of number? To what extent can the psychology be learned by observing children? Illustrate.

2. In the act of counting, the child begins with a whole, analyzes it and forms a new whole. How does the second whole differ from the first? Which whole will the child remember the longer? Why?

3. What special preparation should you make for teaching number in the primary grade?

4. Outline a plan for the construction of a number chart. State what you would expect to gain by the use of such a chart.

5. Why is it essential that the pupils *do* the work in the number lessons? Why do teachers often fail to secure the desired results in these lessons?

6. Why should lessons in finding parts of quantities, such as halves and fourths, be introduced before lessons in multiplication? Psychologically, how does multiplication differ from addition?

7. Of what value is the multiplication table? What danger must be guarded against in teaching it?

8. How long should objects be used in teaching numbers? Give reasons for your answer.

9. With what other lessons can you correlate number work? Select one of the lessons named and illustrate how the work can be done.

10. Would you lay special stress on language and form in the number lesson? Why?

## CHAPTER EIGHT

### SECOND YEAR NUMBER WORK

**1. The Work of the Second Year.** As a rule, no book in number work is used by the children in the second grade, but number facts are taught in the same manner as in the first grade. During the second year the pupils are supposed to learn the number facts in addition and subtraction, to and including nine plus nine; to know at least twelve primary and many secondary multiplication facts, with the related facts of division. Complete the multiplication facts as far as recommended on page 284. The eye, ear and tongue should all unite in the mastery of this work. Teach Roman notation as far as XII, since this will suffice for the reading of time and the chapter numbers of the books used in this grade.

The children should also learn the relations indicated by  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ , etc., and should be able to read and write number to 1000. The counting begun in the first grade should be renewed and continued. Have the children count by 3's to 30, by 4's to 40, by 5's to 50, and so on until they have counted by 10's to 100. The measurements learned in the first grade should be reviewed, and other measurements, as ounce, pound, minute, hour, day, week and month, should be studied.

**2. Facts that the Teacher Should Remember.** It is important that the teacher always bear in mind the fact that every lesson needs thorough preparation before being presented to the class. This means the preparation not only of the teacher herself, but the preparation of the children, also. The teacher should have her plan for teaching the lesson well in hand before coming to the class; if any material is necessary, it should be ready; and, most important of all, she should see that the children are ready for the new lesson. Teachers are quite apt to forget this point,

especially when pupils begin using arithmetics. As a consequence, the children are plunged into some new work with no preparation whatever for it and stumble along blindly, when a lesson or two, not given in their books, perhaps, but leading up to the new work, would make the whole subject perfectly clear. It is absolutely necessary for teachers to remember this and look ahead for work that needs especial preparation. Another point for the teacher to remember is to "make haste slowly." Inasmuch as later number work depends so entirely upon the earlier, let the foundation be a solid one. What is done, have thoroughly done. In striving for this thoroughness, guard against slow, monotonous drills. To be sure, drills are necessary, but let them be quick and interesting. As recommended for the first grade, a time limit should be placed on all drill work. The teacher may say, "I am going to give you four minutes; see how many tables you can write in that time." "Let us see how long it will take us to count by 2's, 3's, 5's," etc. Match your classes in this work, and appeal to emulation. An alert, interested teacher will do much toward securing alertness and interest on the part of her classes.

Pupils who are dull in number can be assisted in much the same way as pupils who are dull in spelling, by calling upon them to count and measure wherever such work will be helpful in other lessons. While these pupils should not receive more than their share of attention in the number class, they should receive whatever extra assistance the teacher is able to give them. Otherwise, they are liable to form a distaste for number work and never become proficient in it.

**3. Order of Procedure.** There has been considerable questioning and experimenting in regard to the proper order in which to teach addition, subtraction, multiplication and division. According to one method, the processes are to be taught simultaneously; for instance, a certain number, as nine, is taken, and every possible combination is studied before going on to another number. The addition facts,

the subtraction, the multiplication and the division facts are all thoroughly exhausted before a new number is taught. Another method puts subtraction and division before addition and multiplication. Another teaches addition, then subtraction, then multiplication, and then division. What, then, is the best method of procedure?

We have already learned that the origin of number lies in the mind's activity in measuring quantity. We have learned also that in measuring quantity, our measurements are first indefinite, then, later, definite. In our first, indefinite measurements we express results as *more* or *less* than some other quantity. John is taller than Sue, Frank has more apples than Albert, Elizabeth's book is larger than Mabel's. In reality, when we are getting these ideas of a quantity more or less than some other quantity, we are using the processes of addition and subtraction. When comparing Frank's apples with Albert's, we count Frank's, not by number, perhaps, but as this many apples, and this many, and this many. What is this but addition? We then count Albert's and compare, discovering that Frank has more than Albert. We have now subtracted. So we see that addition and subtraction are closely related processes and arise even before the mind becomes conscious of number ideas.

In the process of finding how much more or how much less one quantity is than another, we have no idea what part one quantity is of another, or of their difference. This idea arises later and gives us the processes of multiplication and division. It is an idea of ratio and embraces not only the processes of multiplication and division, but also fractions, for fractions are merely the expression of a ratio. Three-fourths means the ratio of three to four.

If, then, we would deal with the processes of arithmetic in accordance with the way in which the ideas develop in the child's mind, we must take them in this order: addition, subtraction, multiplication, division. It must not be thought, however, that we must deal completely with one

process before going on to the next. Every process is involved in every other. When we say that two and two make four, we have involved also the idea that four less two are two, that two twos are four and that four divided by two are two. The pupil discovering for the first time that two and two are four may not, probably will not, be conscious that four less two are two, but it will not be long until he is conscious of the fact, and gradually the idea that two times two are four, and four divided by two are two dawns upon him. So we see that when we are teaching addition facts, we are laying the foundation for subtraction, multiplication and division facts. The operations are not separate and distinct, but contain closely interwoven and dependent processes.

**4. Primary Number Facts.** There are certain primary number facts which, once understood and memorized by the children, do away with much needless waste of time and energy. These number facts should be thoroughly memorized, always bearing in mind that their meaning must first be clearly perceived. Of these number facts, there are forty-five primary facts of addition and sixty-four of multiplication. Thirty-three facts of addition and twelve of multiplication will usually be grasped by the pupil before he enters the third grade. Often all of the forty-five addition facts are mastered in the first and second grades. The thirty-three addition facts are as follows:

1	2	3	2	4	3	4	3	5	4	2	6	4	5	7	6	
1	<u>1</u>	1	2	1	2	2	3	1	<u>3</u>	5	1	4	3	1	2	
2	3	4	4	5	5	0	0	0	7	7	7	8	8	8	8	
5	6	7	8	9	8	5	6	7	9	7	6	8	9	8	6	7
4	<u>3</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>2</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>4</u>	<u>5</u>	<u>3</u>	<u>3</u>	<u>4</u>	<u>0</u>	5
9	9	9	9	10	10	10	10	10	11	11	11	11	12	12	12	12

These addition facts carry with them related subtraction facts. A boy who knows that nine and two are eleven should



also perceive that eleven less two are nine, and eleven less nine are two.

The twelve multiplication facts that second grade pupils should know are the following:

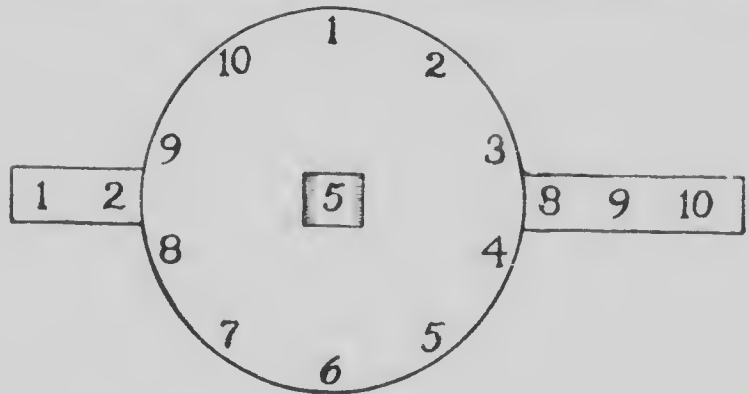
$$\begin{array}{l} 2 \times 2 = 4 \\ 3 \times 2 = 6 \quad 2 \times 3 = 6 \\ 4 \times 2 = 8 \quad 3 \times 3 = 9 \quad 2 \times 4 = 8 \quad 2 \times 5 = 10 \\ 5 \times 2 = 10 \quad 4 \times 3 = 12 \quad 3 \times 4 = 12 \quad 2 \times 6 = 12 \\ 6 \times 2 = 12 \end{array}$$

These multiplication facts involve division facts. If a pupil knows that four times two equal eight, he will also know that eight divided by two equals four and eight divided by four equals two. Once these facts are clearly perceived and memorized, a good foundation for future work is laid.

**5. Devices.** (a) **CARDS.** The perception cards recommended for first year work in addition, subtraction and multiplication should be used freely for drill on thirty-three facts of addition. Give much drill on such combinations as  $\frac{7}{5}$ ,  $\frac{8}{3}$ ,  $\frac{5}{3}$ ,  $\frac{7}{2}$ ,  $\frac{7}{4}$ ,  $\frac{7}{3}$ , and do not spend time drilling on

the simpler combinations, as  $\frac{2}{2}$ ,  $\frac{3}{3}$ , if the children have already mastered them.

(b) **NUMBER CIRCLE.** The following device may be used



for drill on the facts of addition. Draw a large circle on a 12 x 14 inch piece of white tag board, or other suitable material. On the circumference of the circle print the numbers from 1 to 10. Cut two slits in the center of the circle large enough to allow a 16 x 2 inch piece of tagboard to be drawn through. On the 16 x 2 inch piece of tagboard print the numbers from 1 to 10 (about two inches apart), and draw this through the center of the large circle. Drill by combining the figure in the center with any number of the circle. This device can also be used in multiplication.

**6. Illustrative Lessons.** (a) ADDITION. Purpose of the lesson—To teach the number facts of fourteen.

$$7 + 7 = 14; 9 + 5 = 14; 8 + 6 = 14.$$

*Material.* Materials needed are balls, two baskets, and a table around which the children gather. Marbles or other round objects may be used in place of balls.

*Method.* The teacher introduces the lesson with the following:

"I have a puzzle for you to solve this morning, but before I tell you what it is I want you to count these balls."

"There are fourteen."

"John, please write that number on the board, so that we shall be sure to remember it."

The number is written.

"I am going to call these balls peaches, and here is the puzzle. I want to put the peaches into two baskets to carry them home. Neither basket must have more than nine peaches. How shall I divide them?"

After thinking a moment or two, several children think they can divide them.

"Well, Ruth, you may put them in the baskets."

Very probably Ruth divides the peaches evenly.

"Class, how many in each basket?"

"Seven."

"How many in the two baskets together?"

"Fourteen."

"Fourteen are seven and how many more?"

"Fourteen are seven and seven more."

"How many sevens in fourteen?"

"There are two sevens in fourteen."

"Seven and seven are how many?"

"Seven and seven are fourteen."

"Mary, tell us that at the board."

Mary writes, " $7 + 7 = 14$ "

"Who can tell us now two facts about the number fourteen?"

"Seven and seven are fourteen."

"Two sevens or two times seven are fourteen."

"This is the way we write it when we say, two times seven are fourteen.  $2 \times 7 = 14$ . You see it is just another way of saying this: (Point to  $7 + 7 = 14$ )."

"I have found out another fact about fourteen that no one has mentioned. Who else has found out a new fact?"

Possibly no one has.

"Suppose that I take one basket of peaches home and leave the rest. How many do I leave?"

"Seven."

"Then what else do we know about fourteen?"

"We know that seven taken away from fourteen leaves seven."

"Yes. Who can tell it in a different way?"

"Fourteen less seven equals seven."

Here give a quick drill as follows: "Two sevens are how many?" "Fourteen less seven equal how many?" Also give concrete problems involving facts taught concerning 14 and 7.

"Perhaps you thought my puzzle was an easy one, but I'm not through yet. Ruth divided the peaches by putting seven in each basket. I should like to have them divided in a different way. Remember that neither basket is to have more than nine peaches. How shall we divide them?"

After thinking a moment or two, some, if not all, of the children are ready to try to divide the peaches between the two baskets.

"Robert, you may divide them."

Robert divides them into groups of six and eight. They are counted, and the new addition fact,  $6 + 8 = 14$ , is noted and written on the board under the first addition fact.

The related subtraction facts,  $14 - 8 = 6$  and  $14 - 6 = 8$ , are brought out and, if desired, written in a separate column.

"We have found two ways of making fourteen, and now if you can find one more way you will have solved all of my puzzle."

The third addition fact,  $9 + 5 = 14$ , is discovered and the related subtraction facts,  $14 - 9 = 5$  and  $14 - 5 = 9$ , are brought out. These new facts are written in their respective columns, and the addition facts are memorized. The pupil will see that if  $9 + 5 = 14$ , it naturally follows that  $14 - 9 = 5$  and  $14 - 5 = 9$ , so the subtraction facts do not need to be as carefully memorized as do the addition facts.

*Caution.* It is necessary to bear in mind that too much must not be attempted at a time. Drill on the addition fact, say,  $9 + 5 = 14$ , and the related subtraction facts, before you attempt to teach other facts concerning 14.

*Other Facts.* Other addition facts may be taught in the same way or by means of different devices. They may be learned in playing store, in playing games or in measuring liquids. A good way to teach these facts is by constructing oblongs. Let the first one contain nine square inches, the second, five. The fact that nine square inches and five square inches make fourteen square inches is readily grasped. The children are then asked to draw two other oblongs of different size which shall together contain fourteen square inches, neither oblong to contain more than nine square inches. They will enjoy puzzling it out. The teacher should see that the children understand that the nine and five, six and eight, or seven and seven may mean birds, apples, dollars, bushels, or any other objects.

*Devices.* (1) It often proves an aid in securing rapid addition to have the children add by tens, in the following

way: Ask the class to count by tens, beginning with seven: 7, 17, 27, 37, 47, 57, 67, 77, 87, 97. Write the numbers in a column. Have the children then add seven to each number, writing the problems and results in a column:

$$\begin{array}{r} 7 + 7 = 14 \\ 17 + 7 = 24 \\ 27 + 7 = 34, \text{ etc.} \end{array}$$

Lead the children to see that increasing one of the addends by ten increases the sum by ten. Have several tables made in this way, as:

$$\begin{array}{l} 4 + 4 = 8; 14 + 4 = 18, 24 + 4 = 28, 34 + 4 = 38, \text{ etc.} \\ 9 + 9 = 18, 19 + 9 = 28, 29 + 9 = 38, 39 + 9 = 48, \text{ etc.} \end{array}$$

(2) When the sum of the units equals ten, as in adding 67 and 43, the following device is often used. Instead of counting first units and then tens, count thus: Six tens and four tens make ten tens. Seven units and three units make ten units, or one ten. Ten tens and one ten make eleven tens, or 110. Various problems may be put on the board and added in this way. To illustrate:

$$\begin{array}{r} 38 \qquad 64 \qquad 55 \\ + 22 \qquad \underline{30} \qquad 35 \end{array}$$

(3) The following will illustrate another device often used in adding numbers, the sum of whose units equals ten. In the problem  $35 + 15$ , we may add as follows: 35, 45, 50.  $35 + 15 = 50$ ;  $20 + 14 = 20, 30, 40$ ;  $38 + 12 = 38, 48, 50$ ;  $34 + 10 = 34, 44, 50$ .

(4) Unless the pupils have been thoroughly grounded in the fact that a number, as 14, consists of a certain number of tens and a certain number of units, the so-called carrying process will be a bugbear to them. They must clearly recognize the fact that 72, for instance, is made up of seven tens and two units before they can understand why the units must go in one column and the tens be added in with the next.

To prepare children for the "carrying process," devote a few minutes of the recitation period to such exercises as the following: "How many tens in twenty?" "Name the number of tens and fives in 25." "How many tens in 29?" "How many over?" "How many ones in 29?"

For children who have trouble in remembering how many tens or hundreds were to be added to the tens or hundreds, a simple device, as here shown, may be used:

(1)	14	(2)	235
	16		166
	18		<u>425</u>
	<u>15</u>		719
	43		11
	<u>2</u>		829
	03		

The sum of the units column in (1) is 23. The three is written under the units column, the two below and to the left of three in the tens column. The tens are added, and finally the partial answers are added together.

In performing additions where one number is "carried" from one order to the next, it is better to avoid the use of the word *carry*. If the process is made perfectly clear to the pupil, he will not need the word *carry*, nor will the teacher need to use it in her explanations. Some work in simple addition of figures in columns can be introduced here to advantage. For instance, the children can add the columns shown at the left. Teach the children to combine and add in groups. The "group method" in addition is a labor saving device and leads to rapid work.

(b) SUBTRACTION. Inasmuch as addition facts carry with them related subtraction facts, children find little difficulty in subtracting until they come to the subtraction of numbers in which digits of the subtrahend exceed digits of the minuend.

Let us consider such a problem for a moment. We will suppose our problem to be  $34 - 18 = ?$ . Before taking up the explanation of this, what previous preparation does the understanding of such a problem necessitate?

The children long ago have learned the form of subtraction problems illustrated by  $8 - 2 = 6$ . They know that the problem is read "eight less two equal six." They have worked many similar problems and have solved without difficulty problems like  $14 - 5$  and  $15 - 7$ . If they have worked with sticks in bundles of ten, or with ten-cent and one-cent pieces, they are aware that to take five from fourteen they must use tens. To illustrate more fully, in solving the problem  $14 - 5$ , the pupils select one bundle of ten sticks and four separate sticks. As there is no way possible in which they can take five from four, they must untie one bundle of ten, add the number of ones contained to the four ones they already have, and then subtract. In later work, the children have become familiar with the form of problems in which the subtrahend is written under the minuend and the subtraction performed; as,  $24 - 10 = 14$ , etc. As in addition, they learned various ways of performing these subtractions. They learned to subtract by tens first; as, two tens less one ten and four units less one unit; and also to subtract thus: 24 less 12 equals 24 less 10, which is 14, less 2, which is 12. For the sake of the form, the pupils should be taught also to subtract units from units and tens from tens. All of this work now serves as preparation for their new problem,  $34 - 18$ , in which the eight units of the subtrahend exceed the four units of the minuend. The children immediately see that they cannot take eight ones from four ones. The problems in which they had to take a bundle of ten and use them with their ones are recalled and illustrated. The problem in question is worked out by means of bundles of ten and separate sticks, and is then put on the board in this form:  $\begin{array}{r} 34 \\ - 18 \\ \hline \end{array}$

The teacher then says to the class, "You found that you could not take eight ones from four, so what did you do?"

"We untied one bundle of ten and put it with our ones."

"How many ones or units did you then have?"

"We had fourteen."

"Taking your eight ones from fourteen leaves you how many?"

"It leaves six ones."

The teacher writes six in the units place, then asks the children to subtract the tens. In all probability the children will say that three tens less one ten equal two tens, in which case they will have to be reminded that they have already taken one ten away from their three tens. Similar problems should be given and the results verified by actual use of the sticks, or by dimes and pennies, until the pupils can perform operations with figures alone and secure the correct result.

(c) SIMPLE MULTIPLICATION. Before taking up an illustrative lesson in multiplication, let us again call attention to the difference between multiplication and addition. It is necessary that the teacher keep the psychological processes of the two operations distinctly in mind. As previously stated (Caution, page 266), multiplication is not addition.

To be sure,  $2 + 2 + 2 = 6$ , and three times two are six, but the two processes differ. In the first we begin with two and keep adding two, taking no heed of the number of times two is added, but paying attention simply to the sum, which is the main thing we desire to know. In the second process we note the number of times two is repeated to get six. Here a factor idea is present. Three and two are factors of six. While multiplication is implied in the act of addition, at the same time it differs from it in taking cognizance of the number of times a factor is repeated. Pupils should become familiar with this factor idea quite early. When they have discovered that three times two are six, and two times three are six, the teacher should tell them that three and two are called factors of six and ask them to give factors of other numbers.

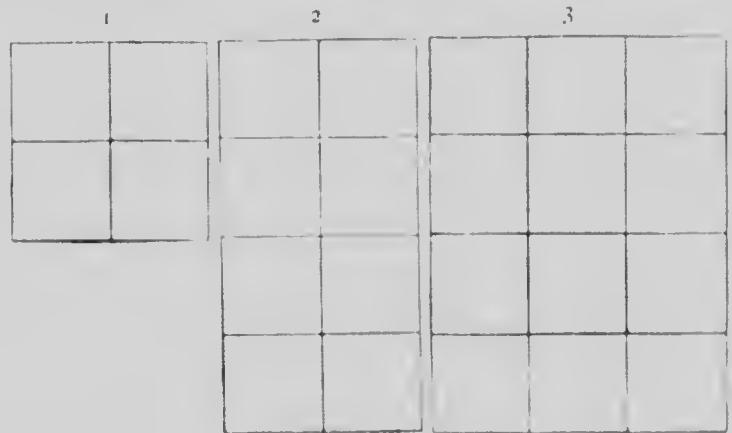


Children in the second grade may reasonably be expected to master the following multiplication facts:

$$\begin{array}{r}
 2 \times 2 = 4 \quad 2 \times 3 = 6 \quad 2 \times 4 = 8 \quad 2 \times 5 = 10 \\
 3 \times 2 = 6 \quad 3 \times 3 = 9 \quad 3 \times 4 = 12 \quad 2 \times 6 = 12 \\
 4 \times 2 = 8 \quad 4 \times 3 = 12 \\
 5 \times 2 = 10 \\
 6 \times 2 = 12
 \end{array}$$

Properly taught, these twelve facts will carry with them division facts. If  $5 \times 2 = 10$  a child should realize that ten is five twos or two fives; that is,  $10 \div 2 = 5$ , and  $10 \div 5 = 2$ . Even in the first grade the pupils can form little multiplication tables of their own and memorize them. As they grow older and are able to make more and more difficult tables, they should thoroughly master each table. Suggestions have already been made for teaching multiplication facts, but the following will illustrate other devices.

*Material.* Drawings which have been made previously in the construction period or as seat work may serve as material. Each child has seven or eight drawings, num-



bered 1, 2, 3, 4, 5, 6, 7, on one large sheet of paper. These drawings are groups of square inches. The first contains four square inches, the second eight, the third twelve, etc.

*Method.* The teacher opens the lesson by saying, "You made some drawings yesterday which I said we would use today in our number work. From these drawings we are going to form the table of fours." (The children have already had some experience in making tables.) "Look carefully at the first drawing. Does it tell you anything about the number four?"

"There are four square inches in it."

"True, but does it tell you nothing else?"

In all probability some one will discover that four ones are four. If no one does, the fact must be developed.

"What was your unit of measure in this figure?"

"One square inch."

"How many times was one square inch repeated to get the figure?"

"Four times."

"Then what does the figure tell us?"

"It tells us that one square inch taken four times gives four square inches."

"Ruth, Mary, Amy and Helen may rise. Class, how many times did I choose one girl?"

"Four times."

"Four times one are how many?"

"Four."

"Who can tell us that at the board?"

A child writes, "Four times one are four."

"Who can tell it in a different way?"

Some child writes, " $4 \times 1 = 4$ ."

"You may all write that under your first drawing. We have discovered the first fact for our table. See now whether you can find out a new fact from your second drawings."

The children readily discover that two fours are eight and four twos are eight. " $4 \times 2 = 8$ " is written under the second figure.

In this way the other multiplication facts are found, the children discovering that each new fact may be found by adding four to the preceding product. When the table

is complete to  $4 \times 12$ , it is thoroughly memorized before going on. Simple problems may be given; as, "If Henry had eight apples and Kenneth four times as many, how many had Kenneth? If Mabel had four apples and Ruth eight times as many, how many had Ruth?" In place of drawing square inches, the children may draw groups of apples, of birds or balls. The lessons may be varied by teaching some of the tables by means of the children themselves. A group of five children stands and the fact that five times one are five is discovered. Five groups of two each gives five times two are ten, five groups of three each, five times three are fifteen, etc.

Another simple device for teaching the multiplication table of 5's is to have the children write the products in columns, as

$$\begin{array}{l} 5 \\ 10 \\ 15, \text{ etc.} \end{array}$$

Then ask, "How many 5's in 10?" Say, "We can write it this way,  $2 \times 5 = 10$ ." "How many 5's in 15?" "This is another way of saying there are three 5's in 15,  $3 \times 5 = 15$ ." Let the children complete the table, and drill. When one table is thus made and understood, make another changing the order of factors. Instead of writing  $4 \times 2 = 8$ ,  $4 \times 3 = 12$ ,  $4 \times 5 = 20$ , let them write  $2 \times 4 = 8$ ,  $3 \times 4 = 12$ ,  $5 \times 4 = 20$ .

*Cautions.* (1) Most children will learn to repeat the multiplication tables with little effort. The combinations constitute a sort of jingle which they like to memorize. It is therefore essential that every number fact in a table exist in each child's mind as a reality before the class begins learning the table in the ordinary way.

(2) Products in the multiplication tables should be learned both ways, i.e.,  $4 \times 2 = 8$ ,  $2 \times 4 = 8$ . Continue reciting the tables aloud and in chorus, for this leads to ear and tongue memory, which may come to the aid of the eye

when trying to recall a fact. After learning  $4 \times 2 = 8$ ,  $2 \times 4 = 8$ , ask, "What number multiplied by 2 = 8?" "What number multiplied by 4 = 8," etc.

(d) MULTIPLICATION INVOLVING THE "CARRYING" PROCESS. When the children are ready for the multiplication of numbers which involves the carrying process, little difficulty need be encountered, if the difference between tens and units be kept carefully in mind. For instance, in the problem 24 multiplied by 4, since the children know that 24 is made up of two tens and four units, and that four times four units give sixteen units or one ten and six units, they will readily understand that the tens must be added in with the product of four times two tens. If they get confused and think that the one ten must be added to the first two and then multiplied by four, let the children for a while write the answer as shown at the right. This form, however, should be dispensed with as quickly as possible, so that there will be no confusion when problems with two figures in the multiplier are reached. The term *carrying* should be avoided, just as it was in addition.

$$\begin{array}{r} 24 \\ \times 4 \\ \hline 16 \\ 8 \\ \hline 96 \end{array}$$

(e) MULTIPLICATION OF NUMBERS IN WHICH THE MULTIPLIER CONSISTS OF TWO FIGURES. Let 34 multiplied by 24 be an illustrative problem. This lesson should be preceded by a rapid test in reading such numbers as 1276, 62, 372, 580, 52 tens, 59 units, 4271, giving the units, tens, hundreds and thousands.

The teacher then says, "We have often multiplied a number by one figure, but never by two. Now we are going to learn how to multiply a number by another number with two figures. Here is our problem." The teacher writes 34 and reads, "Thirty-four multiplied by twenty-four." "In 34, how many tens and how many units, Mary?"

"There are three tens and four units."

"In 24, how many tens and how many units, Harry?"

"There are two tens and four units."

"The first thing we must do is to multiply thirty-four by the units in twenty-four, which are—how many units, Bessie?"

"Four units."

"Rachel, multiply thirty-four by four units for us."

"Four times four are sixteen, or one ten and six units. Four times three are twelve, and one ten more makes it thirteen. Thirty-four multiplied by four equals one hundred thirty-four."

The teacher writes  $134$  in its place.

"We have now multiplied thirty-four by four units. What is there left for us to multiply by if we are to multiply by twenty-four?"

"Two tens."

"Two tens are the same as how many units?"

"Twenty units."

"Very well. Let us call the two tens twenty units for the present. Multiply thirty-four by twenty units for me. Twenty times four units equal how much?"

"Eighty units."

"Eighty units are the same as how many tens?"

"Eight."

"Where shall we write eight tens? In the units' column or tens' column?"

"In the tens' column."

It is written.

"Twenty times three tens equal how much?"

"Sixty tens."

"Who can write sixty tens for me?"

Some one writes  $60$ .

"Class, is that sixty tens?"

"No. It is six tens."

"Well, some one write sixty tens."

$600$  is written.

"Is that sixty tens?"

"Yes."

"What is another name for it?"

"Six hundred."

"Since it is the same as six hundred, where must we put the six? In units', tens' or hundreds' column?"

"Hundreds."

It is written.

"We know now what thirty-four multiplied by four is, and what thirty-four multiplied by twenty is. Can any one tell us what we must do to find out what thirty-four multiplied by twenty and four together equals?"

*Cautions.* (1) Do not allow any guessing. Unless some child has been quick enough to see, simply tell the class that the products must be added. Work very slowly with these problems and work out a good many with the class before giving the pupils any to do alone. In a short time they will not need to think of the tens as so many units, but can multiply by tens directly and put the product in the right place.

(2) Failure to secure accurate results is often due to advancing the work too rapidly. The pupils should be given a large number of problems of about the same degree of difficulty before any more difficult are attempted, and the steps from one class of problems to the next should be very slight. The best results are secured when the pupils thoroughly master the form and method before they are called upon to perform multiplications that require them to give most of their attention to the process.

(3) A point often overlooked by teachers is that combinations of odd numbers are more difficult than those of even numbers. In preparing tables for drills this should be kept constantly in mind, and those combinations should be presented upon which the pupils need the most practice. Watchfulness on the part of the teacher will enable her to determine what these are. There is great danger of falling into a rut and using the same combinations over and over. To children, an old truth is always new when presented in a new light. Frequently change your drill exercises, even though they include the same numbers and combinations that you have been using.

(4) Bear in mind that the skill attained in this work depends to a large degree on how well the multiplication tables are known. If children stumble over multiplication facts, and are not especially troubled with mastering the process, discontinue the work on the process and drill on the multiplication tables.

(f) DIVISION. The work in multiplication leads directly to the work in division. If we know that  $7 \times 6 = 42$ , we also know that  $42 \div 7 = 6$  and  $42 \div 6 = 7$ .

*Material.* An apple or some other object that can easily be divided into equal parts may be used.

*Method.* This lesson presupposes a knowledge of the table of twos, also the fact that two numbers multiplied together to produce a product are called the factors of that product. The teacher says:

"How many of these little folks have brothers and sisters?" (Many have.) "Well, you all have playmates if you have not brothers and sisters. Did you ever have candy and divide it with your little brother or playmate?"

"Yes."

"Well, who can tell me what it means to 'divide' a thing?"

"It means to give part of it to somebody else."

"Yes, but could you divide a thing and give both parts away?"

"Yes."

"Could we divide a thing, candy, for instance, into more than two parts?"

"Yes."

"Yes, we could divide it into any number of parts."

"John, divide this apple into two parts."

The apple is divided.

"Ruth, divide these pennies among three boys."

The pennies are divided.

"I see now that you understand what it means to divide, and this morning we are going to learn to divide with numbers."

The children long ago became familiar with the process

of division both without numbers and with small numbers, but they do not know the process under the name of *division*. To insure a perfect grasp of the meaning of the word *divide*, the foregoing preparation is given. First, have a little review of some facts already learned.

The teacher says, "John, tell us the factors of six."

"Two and three are the factors of six."

The teacher then asks of various pupils, "Two and four are factors of what number?"

"Eight."

"Two and six?"

"Twelve."

"Seven and two?"

"Fourteen."

"Ten and two?"

"Twenty."

"Two and eleven?"

"Twenty-two."

"Two is one factor of eight. What is the other?"

"Four."

"Seven is one factor of fourteen. What is the other?"

"Two."

"Six is one factor of twelve. What is the other?"

"Two."

"Two is one factor of twelve. What is the other?"

"Six."

"If two balls cost twelve cents, what will one ball cost?"

"Six cents."

"If four is one factor of eight, what is the other?"

"Two."

"If four apples cost eight cents, what will one apple cost?"

"Two cents."

"If two apples cost eight cents, what will one apple cost?"

"Four cents."

"What are the factors of ten?"

"Two and five."



"Divide these marbles into groups of five." (The teacher gives ten marbles to each child and they are divided.)

"Ten marbles divided into groups of five give how many groups?"

"Two groups."

"Divide the marbles into two groups. How many have you in each group?"

"Five."

"If you had ten apples and divided them equally among five boys, how many would each get?"

"Two."

"If you had ten apples and divided them among two boys, how many would each get?"

"Five."

"How many fives in ten?"

"Two."

"How many twos in ten?"

"Five."

"Ten of anything divided into five parts gives how many in each part?"

"Two."

"We have a short way of saying this. We say, 'Ten divided by five equals two.' I will write it for you on the board." (The teacher writes it.) "Who can tell me now what ten divided by two equals?"

"Five."

"What do we mean when we say, 'Ten divided by two equals five'?"

"We mean that ten things divided into two parts makes five in each part."

"What are the factors of eight?"

"Two and four."

"Eight divided by four equals what?"

"Two."

"Eight divided by two equals what?"

"Four."

"Two and six are factors of what number?"

"Twelve."

"Twelve divided by two equals what?"

"Six."

"Twelve divided by six equals what?"

"Two."

"I am going to show you a still shorter way of telling this." The teacher writes on the board, " $12 \div 2 = 6$ ." "The little sign (pointing to it) is just another way of saying 'divided by.' It means the same thing." "You may all make the sign on the board." "You may write on the board the factors of 14." (2 and 7.) "Fourteen divided by two equals what?"

"Seven."

"Write on the board  $14 \div 2 = 7$ ."

Various other problems are given to familiarize the children with the work. Occasionally the children are requested to read their work. The lessons may proceed in this manner until the children are ready for a new form of writing problems in division; that is,  $2)20$ ,  $2)22$ , etc.

The children presumably have had the form  $20 \div 2 = 10$ , and are told that this is merely a new way of writing it. As a preparation for this work in short division, the children read numbers, giving the units, tens and hundreds; as, 62 equals six tens and two units; 624 equals six hundreds, two tens and four units. For the first work no numbers are given which are not exactly divisible by the number used as the divisor.

*Short Division.* A list of problems, such as  $20 \div 2 = 10$ ,  $14 \div 7 = ?$ ,  $20 \div 10 = ?$ , is written on the board.

The teacher then says: "Amy, read the first problem and give the answer."

"Twenty divided by two equals ten."

"May, read the next one."

"Fourteen divided by seven equals two."

All of the problems are read.

"This morning," the teacher remarks, "we are going to

learn how to write these problems in a new and very easy way and in a way that will help us work harder problems."

The teacher writes: 
$$\begin{array}{r} 2)20 \\ 10 \end{array}$$
 "This is just another way of

saying  $20 \div 2 = 10$ ." "This [writes  $\begin{array}{r} 10)20 \\ 2 \end{array}$ ] says what, Frank?"

"Twenty divided by ten equals two."

"Twelve divided by four equals what?"

"Three."

"Who can come to the board and write that in the new way?"

Some one writes it.

"Who can write sixteen divided by two and give the answer?"

Many problems are given, so that the class become familiar with the new form.

"I have a much harder problem for you now." "I have sixty-four oranges and want to divide them among two boys and find how many each boy will get." As she talks the teacher writes 
$$\begin{array}{r} 2)64 \\ 32 \end{array}$$
 "There is a very easy way of finding out." "Harry, how many tens and how many ones in this number (pointing to 64)?"

"Six tens and four ones."

"We must divide this number by two. First, let us divide the tens by two. Six tens divided by two equals what, Mabel?"

"Three."

"Three what?"

"Three tens."

"I will write the three tens directly under the six tens. Now let us divide our ones by two. Walter, you may divide them."

"Four ones divided by two equals two ones."

"We will write our ones directly under our ones. How many oranges did each boy get?"

"Thirty-two."

"Frances, read the problem."

"Sixty-four divided by two equals thirty-two."

"What are the factors of sixty-four?"

"Two and thirty-two."

One or two more problems are worked out in this way; then the pupils work some without assistance. By having the factors read and recalling the fact that the factors multiplied together give the number divided, the children readily learn to prove the correctness of their answers. Problems involving hundreds, as 646, are introduced and solved, but not until a large number of problems whose dividends contain only tens and units have been solved. Later, when problems whose divisors contain two numbers are introduced, the teacher must explain carefully the reason for the trial divisor, explaining also why it is called a *trial* divisor.

*Cautions.* (1) While division originates in subtraction, it is a different process. As in multiplication, the mind, by use of the imagination and reason, measures the number (dividend) and arrives at once at the result (quotient). The factor, or times, idea is prominent in the mental process and is used in measuring the whole (dividend) by the part given (divisor), as in dividing 25 by 5. The question is, how many 5's in 25; not, how many times can 5 be subtracted from 25? The relation of the measuring unit, or divisor, to the whole is at once apparent. Since the factor idea is developed in multiplication, division can easily follow multiplication.

(2) Fractions treat of the division of objects into parts, and at first deal with the concrete. This division of objects into equal parts is much easier for the child than is measuring one number by another, or division; therefore, elementary work in fractions should precede division.

(3) With the introduction of the factor, or times, idea in multiplication, we also introduce the idea of ratio. As soon as the child understands that 3 times 2 are 6, he knows that there are three 2's in 6, and as soon as he understands what a fraction is, he recognizes the fact that 2 is one-third

of 6. From this it is an easy step to the ratio, or proportion, idea, that the ratio of 2 to 6 is  $\frac{1}{3}$ .

(4) Multiplication, division, fractions, and ratio and proportion all involve the ratio idea, but in each process it is considered from a different viewpoint—in multiplication as a factor to be used in finding a given sum; in division, as a unit of measure.

**7. Illustrative Lessons in Fractions.** (a) A LESSON TO DEVELOP THE RULE FOR FINDING A FRACTION OF ANY NUMBER. *Material.* Three paper rulers, six inches, nine inches and twelve inches long, for each child. The inches are to be marked off on each ruler. The rulers can be made during the construction or seat work period.

*Method.* The teacher opens the lesson by saying:

"Divide your six-inch ruler into three parts." "Show me one third." "Two thirds." "Three thirds." "Three thirds equals what part of the ruler?" "Divide your nine-inch ruler into thirds." "Show me two thirds." "Show me one third." "Divide your twelve-inch ruler into thirds." "Show me one third." "Three thirds." "Show me one third of this ribbon." (Hands a ribbon of any length to some child.) "Show me one third of this apple." "Show me again one third of the six-inch ruler." "How many inches is it?"

"Two."

"Tell me in a complete sentence how many one third of six inches is."

"One third of six inches is two inches."

"Find two thirds of six inches."

"Four inches."

"What is one third of six inches plus one third of six inches?" "How many inches is it?"

"What is one third of six inches plus two thirds of six inches?" "How many inches is it?"

"Find one third of your nine-inch ruler. How many inches is it?" "How many inches in two thirds of nine inches?" "In three thirds of nine inches." "How many

balls is one third of nine balls?" "How many inches in one third of twelve inches?" "In two thirds?" "In three thirds?" "Show me one third of your six-inch ruler."

"Two thirds is how many times as long as one third?"

"Twice as long."

"Show me one third of the ribbon." "Two thirds is how many times as long?" "Show me one third of the apple." "Two thirds is how many times as much?" "If we know what one third of a thing is, how can we find two thirds?" "How can we find three thirds?" "How did you find one third of your rulers?"

"We folded it into three parts."

"How did you find one third of the apple?"

"We cut it into three parts."

"How do you find one third of anything?"

"Divide it into three parts."

"How do you find one third of  $\frac{6}{3}$ ?"

"Divide it into three parts and take one."

"In other words, you divided six by three." "How can you find one third of nine, then?"

"Divide nine by three."

"How can you find one third of any number?"

"Divide it by three."

"If we find one third of a number by dividing by three, how can we find one fourth of a number?" "One fifth?" "One sixth?" "One tenth?" "One twentieth?"

"Who can tell us, then, what one fourth of eight is?" "One fifth of ten?" "One sixth of twelve?" "One third of twenty-four?" "One third of eighteen?" "One fourth of twenty?"

The same method may be followed until the children clearly see that to find a fraction of a number we must divide that number by the number representing the part required, or the denominator of that fraction, and that if one part is found, two parts will be twice as much, three parts three times as much, etc. After the work has been

clearly grasped, it would be well to let the children form, in their own words, a rule for finding a part of any number.

*Devices.* It is very necessary in this grade to make much use of objective work in teaching fractions. Elaborate fraction disks are not at all necessary for this work; in fact, it is better to take any simple material at hand, such as clay cubes, paper, chalk, etc.

Addition of figures in columns was demonstrated on page 281. From this work it is very easy to see that  $\frac{1}{2}$  of 8 is two 2's, or 4; that  $\frac{1}{4}$  of 12 is 3; that  $\frac{3}{4}$  of 16 are 3 fours, or 12, etc. Children delight in discovering such truths, and a device of this kind adds to the interest in, and clear comprehension of, the subject.

(b) A LESSON TO DEVELOP THE RELATION BETWEEN FOURTHS AND EIGHTHS. This lesson presupposes a knowledge of the relation between fourths and halves.

*Material.* Draw two large circles on the board, one divided into fourths and one into eighths. The circles may represent wagon wheels, pies, or any other circular object.

*Method.* To introduce the lesson the teacher may say, "We were talking about halves and fourths the other day; now we are going to see whether we can find out any new facts about halves and fourths. When we get through, I want you to tell me what new facts we have discovered."

"Into how many parts is this circle divided?"

"Into four."

"What is each part called?"

"Each part is called one fourth."

"Mary, show me one fourth." "Two fourths." "Three fourths." "Amy, show me one half." "One half is how many fourths?"

"One half is two fourths."

"Two halves are how many fourths?"

"Two halves are four fourths."

"Into how many parts is this second circle divided?"

"Eight parts."

"When we divide a circle into four parts, we call each

part a fourth. When we divide it into eight parts, what would we call each part?"

"One eighth."

"Show me one eighth." "Two eighths." "Four eighths." "Five eighths." "Eight eighths." "How many eighths in a whole circle?"

"Eight eighths."

"How many eighths in a half circle?"

"Four eighths."

"Show me one fourth of this circle." "One fourth is how many eighths?"

"Two eighths."

"Two fourths equal how many eighths?"

"Four eighths."

"You say four eighths equal two fourths. What else does it equal?"

"One half."

"How many eighths in three fourths of a circle?"

"Six eighths."

"Five eighths of a circle plus two eighths are how many eighths?"

"Four eighths plus one half are how many eighths?"

"Eight eighths."

"How many wholes?"

"One."

"One half plus one fourth are how many eighths?"

"Three fourths plus one fourth equal how many eighths?"

"Three fourths plus one eighth equal how many eighths?"

"Two fourths plus one eighth?"

The children may ask one another similar questions, and at the end of the recitation may tell what new facts they have learned about one half and one fourth; *i.e.*, that one half equals either two fourths or four eighths, that one fourth is two eighths and that two halves, four fourths and eight eighths are the same. This last is not really new, as the children have discovered before that two halves, three thirds and four fourths all mean 1.



(c) SUGGESTIONS FOR TEACHING ONE HALF OF FIVE, ONE HALF OF SEVEN, ETC. In teaching halves of such numbers, a good plan is to use material that will break or bend easily. Splints may be used and broken to find the half. A five or seven-inch paper ruler with the inches marked may be used and bent in the right place. Measurement with the pint and quart measures may also serve as a means to teach these facts. If the measuring is actually done, or other suggestions followed, the children will have little difficulty in grasping halves of odd numbers.

### TEST QUESTIONS

1. Of what work should the first few number lessons of the second year consist? Why?
2. Write the combinations illustrating (a) all the primary number facts for addition; (b) all those for multiplication.
3. From the point of view of teaching number, which is the more desirable material for number lessons, objects such as rulers and oblongs that the children construct for themselves, or those which are furnished them ready for use? Why? What points of advantage are there in using both kinds of material?
4. How does division differ from subtraction? Illustrate. Why should division be taught in connection with multiplication?
5. How far should you proceed with problems requiring multiplication by one figure before multiplication by two figures is taken up? State the most serious difficulties you encounter in multiplication. To what causes can most of these difficulties be traced?
6. What ought the teacher to gain from the illustrative material in this lesson? When are such lessons wrongly used? Why?
7. Which do you find the more difficult to teach, multiplication or division? Why? How can some of the difficulties in teaching division be removed?

8. Why are simple exercises in fractions, such as finding  $\frac{1}{2}$ ,  $\frac{1}{3}$  and  $\frac{1}{4}$  of a thing, easier for children than exercises in division? When would you introduce these exercises?

9. Construct three problems in multiplication, three in division and four in fractions suitable to be given your pupils the last month of their second year's work in number.

10. Construct a number chart which you can use with second grade pupils during the last half of the year. Explain how it is to be used and state what you expect to accomplish by its use.

## CHAPTER NINE

### THIRD YEAR NUMBER WORK

**1. Text-Book Work.** One great difficulty which teachers encounter in number work lies in the introduction of the text-book. Often children who have previously done very good work seem almost unable to proceed when the book is put into their hands. This will be avoided if the right kind of preparatory work is done.

(a) **PRELIMINARY STEPS.** Be sure that the pupils can read and understand the problems before the text-book is placed in their hands. As a rule, the pupils will be more or less embarrassed by the book, although it contains but few words with which they are not familiar. The embarrassment arises from the fact that the book is to be used for a new purpose. The attention is centered upon the number facts more than upon the reading, and the first few pages should contain nothing with which the pupils are not already familiar.

(b) **PREPARATORY LESSONS.** Special preparatory lessons should always precede the introduction of the book. These lessons should be so planned as to make adequate preparation for the different pages, and they will naturally vary considerably. For some pages merely a word or two of explanation will suffice; for others, a brief oral review will do; again, for others, two or three preparatory lessons which include oral work, blackboard and written work will be found necessary; but bear in mind that there is scarcely a page of text-book matter that will not need some preparation before the children can take it up and carry it through successfully and easily.

At the end of every recitation period it is well to assign a lesson for the next day and have the pupils carefully read each problem to see if all are understood. If there is any difficulty, it can easily be cleared up at this time. After

this preparatory exercise, hold each child responsible for the solution of all problems in the assignment. It is no wonder that children stumble over work that ought to be easy, when we consider how often they are given work to do for which they have had no preparation. Suppose that it has been six weeks or two months since a child has had problems in liquid measure, and he suddenly comes to this problem in his book: "How many gallons in twelve quarts?" Six out of ten children would probably stumble on the question, guess at the answer, and waste a good deal of time before they got it. If the teacher had spent a very few minutes recalling the table of liquid measure and rapidly giving a few problems before the lesson was taken up, the problem, with similar ones that would undoubtedly follow, would be readily solved. Or the teacher might, on the preceding day, give a few problems which would recall all of the work in liquid measure and use these problems for the busy work for that day. This preparation would serve just as well.

(c) ILLUSTRATIVE LESSON. The following will illustrate how a text-book lesson may be taken up.



- "1. One dollar is equal in value to — half-dollars.
- "2. One dollar is equal in value to — fourth-dollars.
- "3. One half-dollar is equal in value to — fourth-dollars. A fourth-dollar is sometimes called a *quarter*, or a *quarter of a dollar*.
- "4. One half of a dollar and one fourth of a dollar are — fourths of a dollar.

"5. One half of a dollar less one fourth of a dollar is — of a dollar.

"6. Four times one fourth of a dollar equals — fourths of a dollar, or — dollar.

"7. One fourth of a dollar is contained in one half of a dollar — times.

"8. One half of one half of a dollar is — — of a dollar."

*Material.* When ready for the lesson, the teacher should state that before using their text-books a short review is to be held. She should bring to the class a dollar, a half-dollar and a quarter.

*Method.* After briefly stating the purpose of the lesson, the teacher may ask, "John, what is the name of this bill?" (Holding up a dollar.)

"It is a dollar."

"How many cents does it equal?"

"One hundred."

"What is the name of this coin?" (Holding up a half-dollar.)

"One half-dollar or fifty cents."

"How many of these does it take to make one dollar?"

"It takes two."

"We say that one dollar is equal in value to two half-dollars. One dollar is equal in value to how many cents?"

"To one hundred cents."

"Two half-dollars are equal in value to how many cents?"

"To one hundred cents."

"What is the name of this coin?" (Holding up a quarter.)

"A quarter or a twenty-five-cent piece."

"You say it is a quarter. A quarter of what?"

"A quarter of a dollar."

"What is another name for a quarter of anything?"

"A fourth."

"Then this (holding up the quarter) is equal in value to what part of a dollar?"

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<sup>1</sup> The Werner Arithmetic, Book II.

"It is equal in value to one fourth of a dollar."

"It is equal in value to how many cents?"

"To twenty-five cents."

"This piece of money (holding up a half-dollar) is equal in value to how many quarters?"

"It is equal in value to two quarters."

"This (holding up the dollar) is equal in value to how many quarters?"

"It is equal to four quarters."

"One dollar is equal in value to how many half-dollars?"

"To how many fourth-dollars?"

"One half of a dollar is how many fourths of a dollar?"

"Two."

"One half of a dollar and one fourth of a dollar are how many fourths of a dollar?"

"They are three fourths of a dollar."

"If I had one half of a dollar and took away one fourth of a dollar, how much would I have left?"

"One-fourth of a dollar, or twenty-five cents."

"How many times must I take one fourth of a dollar to make one half of a dollar?"

"Two times."

"Another way of saying that is to say that one fourth of a dollar is contained in one half of a dollar two times. One fourth of a dollar is contained in one dollar how many times?"

"It is contained in one dollar four times."

"One half-dollar is contained in one dollar how many times?"

"It is contained two times."

"Read this first problem (pointing to the board) and in place of this line, put the words *how many*."

A child reads, "One dollar is equal in value to — half-dollars," supplying the words as directed.

Enough problems are given to accustom the children to supplying the words, *how many*. Other problems are read in which they have to supply the words, *what part*. A few

problems requiring the words, *is contained in*, are given, the word *contained* being told by the teacher if the pupil hesitates.

The text-book may now be used, the attention of the children being called to the pictures at the top of the page. They tell what they see, then solve the problems. Since the meaning of the new phrases has been made clear, the children will have little difficulty in understanding the problems. So, in every lesson, new expressions and new forms of problems should first be made perfectly clear. A teacher needs to be constantly on guard to see that every problem is understood. Ask often for the meaning of the problems or the meaning of a word. Teach the child that in every problem he must look for three things, viz.: what is given, what is required, and the process by which the result is obtained. It is well occasionally to have problems in which these three factors are told by the child with no attention paid to the answer.

It is well at this time to speak briefly of the analyses of problems to be expected on the part of children. It is too often the case that pupils memorize a set form of analysis which has been recommended by the teacher or taken from a text-book. Many teachers even make the mistake of requiring pupils to learn an elaborate explanation for, say, multiplying one integer by another. Let it be remembered that the operation in such cases is sufficient, and an explanation, which is merely a repetition of the words of the teacher or text-book, without any apparent mental content, is not only unnecessary, but harmful. The pupil should be allowed and encouraged to state his reasons for the solution of a problem in his own language. Through this he will acquire a habit of logical expression which will help him in many other lines of expression and afford the teacher opportunity for helpful suggestions.

**2. Reduction of Denominate Numbers.** During the preceding years the children have been thoroughly grounded in the tables of liquid measure, dry measure, Canadian

money and possibly one other table. They can readily change quarts to gallons, gallons to pints, pecks to bushels, etc., but having no knowledge of the meaning of multiplication and division at the time when these facts were learned they did not formulate any rule for the reduction of denominate numbers. This lesson will show how the rules for the reduction of pints to quarts and quarts to gallons may be taught. Rules for the reduction of other denominate numbers may be taught in a similar manner.

**ILLUSTRATIVE LESSON.** *Material.* The measures and water should be at hand in case any child has forgotten the facts or cannot reduce quantities read.

*Method.* This lesson should begin with a short review of the table of liquid measure. For the review, questions somewhat like the following may be asked: "May, how many pints in one quart?" "How many pints in two quarts?" "Harry, how many quarts in one pint?" "In two pints?" "In four pints, class?" "Nellie, how many quarts in a gallon?" "How many quarts in three gallons, John?" "How many gallons in eight quarts?" "In twelve quarts?" "Who can say the little table about pints, quarts and gallons?"

"Two pints make one quart.

Four quarts make one gallon."

"We are going to find out today whether we cannot make some rules to help us in changing from pints to quarts, quarts to gallons, and back again from gallons to quarts and quarts to pints." "Suppose that I have six pints of milk. How many quarts have I, Robert?"

"You have three quarts."

"Class, how did Robert know that six pints is the same as three quarts?"

"He knew that one quart is two pints, another one would be two more, or four pints, and another quart would make six pints."

"True, but can we not find a shorter way to tell it? Suppose that I had twenty pints that I wanted to change



to quarts. Must I say that one quart is two pints, another is two more, another two more, and two more and two more and so on until I have used up twenty pints? Think how long it would take. I'm sure you do not do that when I ask you how many quarts there are in twenty pints. How many quarts are there?"

"Ten."

"How do you know?"

"Because there are ten twos in twenty."

"How many quarts in sixteen pints?"

"Eight."

"How do you know?"

"Because there are eight twos in sixteen."

"Tell us that at the board."

The child writes,  $8 \times 2 = 16$ .

"Suppose, though, that we do not know how many twos there are in a certain number? How can we find out?"

"We can divide."

"Divide what?"

"We can divide the number by two."

"Show me, by dividing, how many twos there are in 44."

"In 62." "In 84."

"I have 68 pints of milk. Show me by division how many quarts I have." "In the same way show me how many quarts in 88 pints."

"In 42 pints."

"Who now can make a rule for us that will always help us to change pints to quarts very quickly? Make your rule very exact and word it carefully."

"To change pints to quarts, divide the number of pints by two."

Following this same plan, the children will readily tell how to change quarts to gallons and then the rule may be developed that to change from a quantity of a certain order to a quantity of a larger order we must always divide.

It is a very simple matter to secure from the children the rule that to change from a quantity of a certain order





Photograph from Detroit Young Training School

NUMBER ELEVEN

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to one of a lower order we must multiply. Liquid measure may be taken up first and the rule for changing from gallons to quarts quickly developed, as follows:

"Marjorie, how many quarts in one gallon?" "How many quarts in two gallons, class?" "In four gallons?" "In six gallons?" "Tell me how you find it."

"In one gallon there are four quarts, so in six gallons there are six times as many quarts."

"I have a certain number of gallons of oil. I am not going to tell how many, but I want to know how I can find out how many quarts there are."

"You must multiply the number of gallons by four."

"Put that in the form of a rule."

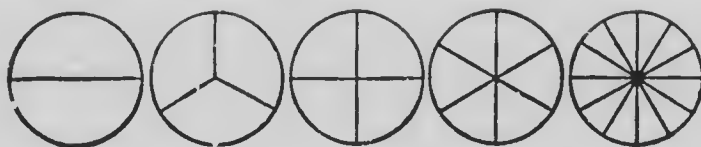
"To change gallons to quarts, multiply the number of gallons by four."

The rule for changing quarts to pints may now be developed. Dry measure may be taken up next, then money, then linear measure. Rules should be developed in each case until it is perfectly clear to the children that when we change a quantity of one order to a quantity of higher order, division always takes place, and when we change a quantity to a quantity of lower order, multiplication takes place.

*Caution.* Teachers are too apt to think that it is a waste of time to develop rules from the children and, consequently, give the rule themselves and feel satisfied if the pupils perform the operations. Do not be this kind of a teacher. Make your pupils think instead of doing their thinking for them. Do not be content to have a lot of little machines grinding out answers to problems, but seek to develop reasoning power and judgment. In no other subject is there greater opportunity for doing this than in arithmetic, and only insofar as this result is accomplished is number work of practical value.

**3. Addition of Fractions.** ILLUSTRATIVE LESSON. Purpose of the lesson: To develop the rule for the addition of fractions.

*Material.* On the board have five large circles as follows:



*Method.* In beginning the lesson the teacher says to the class, "Not long ago we found out what a fraction is and why we call it a fraction. Today we are going to find out something new about fractions. How many parts in this first circle?"

"Two parts."

"Each part is called what?"

"Each part is called one half."

"What is each part in the second circle called?" (One third.) "In the third?" "The fourth?" "The fifth?"

"In one whole how many twelfths?"

"Twelve twelfths."

"In one half how many twelfths?"

"Six twelfths."

"In one third how many twelfths?"

"Four twelfths."

"In one fourth how many twelfths?"

"Three twelfths."

"In one sixth how many twelfths?"

"Two twelfths."

"In one half and one twelfth how many twelfths?"

"Seven twelfths."

"In one third and one twelfth how many twelfths?"

"In one fourth and one twelfth?"

"In one sixth and one twelfth?"

"If I had two and one half apples and some one gave me a twelfth of another, how many apples would I have?"

"You would have two and seven twelfths."

"Then two and one half plus one twelfth equals what?"

"It equals two and seven twelfths."

"I will write that for you." (Writes  $2\frac{1}{2} + \frac{1}{2} = 2\frac{2}{2}$ .)

"If John had one and one third apples and Rina gave him three twelfths more, how many would he have?"

"He would have one and seven twelfths."

"Harry, tell us at the board what one and one third plus three twelfths equals."

It is written.

"Here is a harder problem. You will have to think carefully." "If I had one half of an orange and one third of it and one twelfth of it, how much would I have?"

"You would have eleven twelfths."

"How do you know?"

"Because one half is six twelfths, one third is four twelfths and one twelfth is one twelfth, so all together they make eleven twelfths."

"Suppose we write that." The teacher writes  $\frac{1}{2} + \frac{1}{3} + \frac{1}{12} = \frac{6}{12} + \frac{4}{12} + \frac{1}{12}$ , or  $\frac{11}{12}$ . She then says, "Add this" (writing  $\frac{1}{2} + \frac{1}{3} + \frac{3}{12}$ ). When the answer is given, the teacher writes,  $\frac{1}{2} + \frac{1}{3} + \frac{3}{12} = \frac{6}{12} + \frac{4}{12} + \frac{3}{12} = \frac{13}{12}$ , or 1. The following problems are then given:

$$\begin{array}{lll} \frac{1}{3} + \frac{1}{4} + \frac{1}{12} = ? & \frac{1}{3} + \frac{1}{6} + \frac{1}{12} = ? & \frac{1}{4} + \frac{1}{2} + \frac{1}{12} = ? \\ \frac{1}{6} + \frac{1}{3} + \frac{1}{12} = ? & 1 + \frac{1}{2} + \frac{1}{12} = ? & \frac{1}{2} + \frac{1}{3} + \frac{1}{12} = ? \end{array}$$

In each case the results are written out as shown above. The teacher then says to the class, "I want you to tell me exactly what you did when you added these fractions" (pointing to the problem  $\frac{1}{3} + \frac{1}{4} + \frac{1}{12} = \frac{4}{12} + \frac{3}{12} + \frac{1}{12}$ , or  $\frac{8}{12}$ ).

"We changed the one third and one fourth to twelfths and added them to the one twelfth."

"In other words, you changed these two fractions (one half and one third) to fractions of another name. What new name did you give them?"

"Twelfths."

"What new name did you give these?" "These?" "These?" (Pointing to different problems.)

"Well, what made you change them to twelfths?"

"So that we could add them."

"Why didn't you change this one half ( $\frac{1}{2} + \frac{1}{3} + \frac{1}{12} = \frac{6}{12} + \frac{4}{12} + \frac{1}{12}$ ) to fourths and say that  $\frac{1}{2} + \frac{1}{3} + \frac{1}{12} = \frac{4}{4} + \frac{1}{2} + \frac{1}{12}$ ?"  
 "Won't this do?"

"No."

"Why not?"

"The fractions must have the same name."

"Did you give them the same name in all of these other problems?"

"Yes."

"Must they always have the same name?"

"Yes."

"Very well. Who, then, can make a rule for us telling us how to add fractions?"

"To add fractions change them to fractions having the same name."

"Add these fractions for me." (The teacher writes  $\frac{1}{2} + \frac{3}{4}$ .)

"One half equals six twelfths; three fourths equals nine twelfths. Six twelfths and nine twelfths equal fifteen twelfths."

"You did that correctly, but there is a much easier way to add these fractions. Who sees it?"

If no one does, the teacher rapidly draws two circles, dividing one into halves, the other into fourths.

"Now who sees how to add one half and three fourths?"

The children readily see that the fractions can be added by changing them to fourths. In the same way show that halves and thirds may be added by reducing them to sixths; halves and sixths to sixths, thirds and sixths to sixths, in each case emphasizing the fact that while it is not wrong to change them to twelfths, it is easier and better to change them to fractions with smaller names. When this fact has been firmly fixed, the teacher may say "Harry gave us a good rule for adding fractions. Who now can add something more to that rule to make it even better?" The new rule given may be very crude, but never mind. If it states the facts, that is all you want. Furthermore, never discourage a child when he is attempting to form his own rule, but give all the praise you possibly can. In all

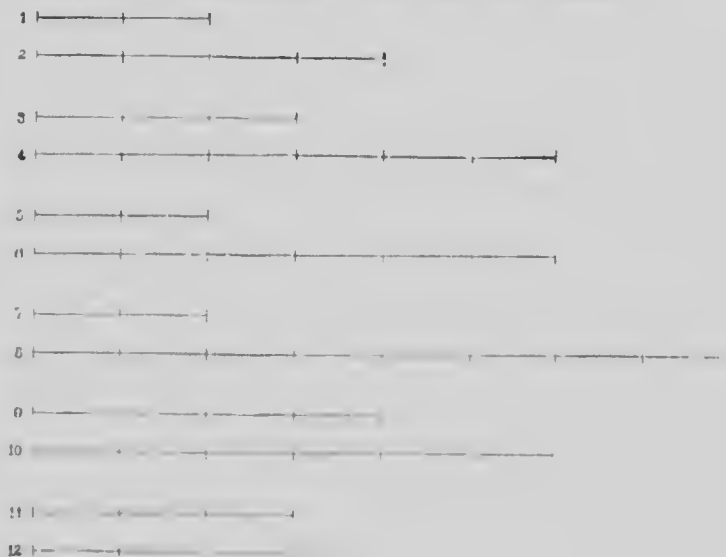
probability the rule which the children now give will be somewhat as follows: "To add fractions, change them to fractions having the same name. Make the new name as small as you can, and then, when the fractions all have the same name, add them." Though the rule lacks conciseness, for the first attempt it certainly should be praised. Later on, it can be polished and made more concise.

Do not hurry in this work. Take plenty of time for the development of each rule. Then give plenty of drill in applying the rule before teaching anything new.

Following this same plan, the rule for subtraction of fractions may be developed. The same figures may also be used in teaching multiplication and division of fractions.

*Caution.* Do not think that the lesson as outlined above is to be finished at one recitation. It may take two, three, four, five or even more, according to the class and the readiness with which they grasp new ideas. Take plenty of time with the beginning work and you will find that time will be saved in the end.

#### 4. Ratio and Proportion. ILLUSTRATIVE LESSON.





*Material.* Lines drawn as above are on the board. The lines should be long enough so that they can be readily seen. If the first line is drawn twelve inches long and the second twenty-four, they will be found to serve the purpose very well.

*Method.* The teacher says to the class, "I have drawn some lines on the board this morning which I want you to compare. We shall call each of these divisions one inch." "In line marked 1, how many inches are there?"

"There are two inches."

"In line marked 2, how many inches?"

"There are four inches."

"Line 1 is what part of line 2?"

"Line 1 is one half of line 2."

"I am going to tell you a new way of saying that. We say that the ratio (writing the word) of line 1 to line 2 is one half."

"We also say that the ratio of line 2 to line 1 is two. Who sees why?"

"Because it is twice as long."

"What is the length of line 3?"

"Three inches."

"Of line 4?"

"Six inches."

"Line 3 is what part of line 4?"

"It is one half of line 4."

"Who, then, can tell me what the ratio of line 3 to line 4 is?"

"The ratio of line 3 to line 4 is one half."

"What is the ratio of line 4 to 3?"

"The ratio is two."

"What is the ratio of line 5 to 6?"

"The ratio of line 5 to 6 is one third."

"What is the ratio of line 6 to 5?"

"The ratio of line 6 to 5 is three."

"What, then, is the ratio of two inches to six inches?"

"Of six inches to two inches?" "Of two apples to six

apples?" "Of six apples to two apples?" "Of two bushels of corn to six bushels?"

"Look closely at lines 7 and 8 and tell me the two ratios."

"The ratio of line 7 to line 8 is one fourth, and the ratio of line 8 to line 7 is four."

"In lines 9 and 10 we have something larger. How many inches in line 9?"

"There are four inches."

"In line 10?"

"There are six inches."

"Each one of these six inches is what part of the whole line?"

"Each one is one sixth of the whole line."

"Then line 9 is what part of line 10?"

"It is four sixths."

"What, then, is the ratio of line 9 to 10?"

"It is four sixths."

"What is the ratio of four inches to six inches?" "Of four apples to six apples?" "Of four cents to six cents?"

"Now, we say that the ratio of line 10 to line 9 is six fourths. Who sees the reason for that?"

"Because to make line 10 out of line 9 we must take line 9, or four fourths, and two fourths more, making six fourths."

"Who can tell the two ratios of lines 11 and 12?"

"The ratio of line 11 to line 12 is three fourths. The ratio of line 12 to line 11 is four thirds."

"Tell me again the ratio of line 1 to line 2."

"One half."

"Of line 2 to line 1."

"Two."

"Suppose that each little line means a stick of candy. If these four sticks of candy can be bought for four cents, for how many cents can I buy two sticks?"

"For two cents."

"If four cents buy eight pencils, how many will two cents buy?"

"They will buy four."

"If two cents buy four marbles, how many will four cents buy?"

"They will buy eight marbles."

"Look at lines 5 and 6 and tell me the ratio of two inches to six inches." "Of six inches to two inches." "Of two marbles to six marbles." "Of six marbles to two marbles."

"If two marbles cost ten cents, what will six marbles cost?"

"They will cost thirty cents."

"If six marbles may be bought for twelve cents, for what can I buy two marbles?"

The teacher should give many other similar problems. Problems involving the ratio four sixths will be more difficult, but if small numbers are used at first, the children will readily take up the work. By drawing the line of six inches again and dividing it into thirds, the children will recognize four sixths as two thirds and six fourths as three halves. Continue the work until the children thoroughly understand this kind of problem.

**5. Written Work.** In the third grade rapid written work should be an important feature. Give the children about five minutes to see how many problems can be worked correctly in that time. Appeal to emulation; match your classes, and aim to have the recitation full of snap from start to finish. A good deal of simple work can be done as seat work, or busy work, as it is often called. Tables of multiplication and division may be formed, simple number stories written, problems on the board solved or original drawings made to illustrate number facts. These papers should be carefully looked over and returned with the mistakes marked. A good many teachers get into the habit of demanding considerable written work which is consigned to the waste basket without being looked over. This practice leads to careless work, for the children, knowing that their work will not be corrected, naturally do not try to do their best. A capable, older pupil may often be entrusted

with this work of looking over papers if the teacher is very busy. The teacher should see to it, however, that this pupil does her work carefully and conscientiously.

**6. Decimals.** Decimal fractions, if properly taken up, do not prove difficult for most children. The following will illustrate one way in which the work may be commenced: The teacher informs the class that they are going to learn about a new kind of fractions. She then asks the question, "Robert, fifty cents is what part of a dollar?"

"It is one half of a dollar."

"How many one-hundredths of a dollar is it?"

"It is fifty one-hundredths."

The teacher writes:  $50c = \frac{50}{100}$ . "Now we will write it another way, using the dollar sign." The teacher then explains that the decimal point must be written before every decimal fraction. \$.50 is written at the right of  $\frac{50}{100}$ .

"Mary, write forty-five cents in these three ways."

"Write seventy-five cents, Ruth."

"Class, read this number." (The teacher writes \$1.55.)

"Of what use is the decimal point?"

"It separates the cents from the dollars."

"How many cents are there in that sum?"

"There are fifty-five cents."

"In fifty-five cents, how many tens?"

"There are five tens and five cents more."

"Here, now, is one thing we must remember. The first number which follows the decimal point means tenths. In this number (\$1.55) the first five means five tenths of a dollar. In these numbers tell me how many tenths of a dollar."

\$ .25	\$1.53
.69	4.28
.87	3.07
.40	1.03

The tenths are given.

"In \$ .55 you said there were five tenths and five cents

(1.)

more. Now this five cents that is left is what part of a whole dollar?"

"It is five one-hundredths."

"Let us write it in three ways."

"It is written thus:  $5c$ ,  $\frac{5}{100}$ ,  $\$ .05$ ."

"Write six cents in three ways." "Seven cents." "Eight cents." "Ten cents."

"Here, then, is something else to remember. The second figure after the decimal point means hundredths. Now read these same numbers and tell the hundredths in each case."

"Now how shall we write a decimal fraction that does not contain tenths?"

If no one knows, the teacher explains.

"When we first began, you said that fifty cents equals fifty one-hundredths of a dollar. Twenty-five cents is how many hundredths of a dollar?"

"It is twenty-five hundredths."

"Read these same numbers as so many hundredths of a dollar."

The numbers are read, the dollar being omitted in the second column.

"If I write five tenths of a dollar thus (writing  $.5$ ), how shall I write five tenths of a bushel?" "Five tenths of a foot?" "Five tenths of anything?"

"If three hundredths of a dollar is written  $.03$ , how shall we write three hundredths of anything?"

"How shall we write twenty-five hundredths?" "Sixty-five hundredths?"

Plenty of practice in reading and writing decimals is given and problems in addition and subtraction are solved until the children are perfectly familiar with the two places following the decimal point. In a later lesson it could be brought out that  $1.2$  may be read one and two tenths, or twelve tenths;  $3.7$  as three and seven tenths, or thirty seven tenths. Do not introduce this too soon, for fear of confusing the children.

*Caution.* It is not necessary, or even desirable, that children in this grade know any of the theory of decimal fractions. The decimal point should be looked upon by them simply as separating dollars and tens (hundreds and tenths), and will give no trouble unless the teacher, by other explaining, confuses the class.

**7. Other Features of Third Year Work.** It is usually considered sufficient if the child understands numbers to 10,000 in this grade, although he may be allowed to count by 10,000's to 100,000, or even farther. In the writing of Roman numerals there is no need in going beyond C in the first half year, and M in the second half. The counting of the second grade should be continued, including the 6's, 7's, 8's, 9's and 10's. These can be used as a basis for the multiplication tables and as a review of addition combinations.

The 45 combinations of one-figure numbers should be reviewed, and in the first half year oral work of the type of  $30 + 40$ ,  $35 + 40$ , should be taken, to be followed in the second half year by cases like  $25 + 42$  and  $225 + 42$ , where no carrying is involved. The multiplication may be carried so far as to include three-figure multiplicands and one-figure multipliers. The division may include one, and, in stronger classes, two-figure divisors not exceeding 12, and it is well to give children the form which will be needed for later

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work in arithmetic and algebra; that is,  $27864$ .

Lack of space forbids treatment of all of the various phases of number work, but with the suggestions made, with a careful study of good books on number work, with the help to be found in educational magazines, and with personal ingenuity, a teacher should be able to make of number work a most delightful study.

She should bear in mind that to be successful in teaching any subject, she must have a definite end in view and constantly work toward this end. Disjointed, spasmodic work bears little fruit. It is the steady, patient striving



MICROCOPY RESOLUTION TEST CHART

ANSI AND ISO TEST CHART NO. 2



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to accomplish a certain purpose that counts. Furthermore, it is absolutely essential that the teacher have a good grasp of the topics she expects to cover in a certain term. She should not teach from day to day, as it were, taking up decimals today and not knowing what is coming tomorrow. She should know thoroughly the whole field of work and make the lessons of one day pave the way for the lessons of the next.

**8. Typical Problems.** The following problems are suggested as types which may be given with profit to a third grade class:

#### ORAL EXERCISES

(1) The meat for our dinner cost 25 cents; the coffee, 10 cents; the strawberries, 10 cents; the bread, 5 cents; the cream, 5 cents. Find the total cost.

(2) Will's mother sent him down town to buy food for breakfast. The coffee cost 20 cents, the eggs 17 cents, the butter 20 cents. How much did the food cost? Will's mother gave him \$1. How much change did he bring home?

(3) Leo's wagon cost \$1.25 and Jack's wagon cost \$2.00. Find the cost of both.

#### WRITTEN EXERCISES

(1) I have \$484 to be divided equally between 4 men. How much shall each receive?

(2) May's mother bought 10 yards of dress goods at \$.50 a yard, and two pairs of shoes at \$2 per pair. How much did these cost?

(3) She also bought six buttons at 30 cents a dozen, and 5 spools of silk at 6 cents a spool. How much did these cost? Find the cost of all the material.

#### TEST QUESTIONS

1. How early in the third year would you place the arithmetic in the hands of the pupils? Give your reasons for your answer.

2. To what extent should the teacher study a primary arithmetic before placing it in the hands of the class? Why should the teacher keep more than a lesson or two ahead of the class in any text-book?

3. Why should exercises in denominate numbers begin in the third grade? Why should you use both applied and abstract problems in this grade?

4. Give the outline of an illustrative lesson that you would use to show the reductions in linear measure.

5. Should the pupils memorize the definitions and rules found in the arithmetic? Why?

6. How can strips of paper be used to illustrate the lesson on addition of fractions? State how you would have the paper prepared, and how the pupils should use it.

7. Outline an illustrative lesson for teaching the subtraction of fractions.

8. What work in fractions should be done in the third grade?

9. What relation do you find between the lesson on addition of fractions and that on proportion? Which do you consider the more difficult to the pupils? Why?

10. What are the advantages arising from the introduction of decimal fractions into the third year's work? Why do pupils in the higher grades usually find decimals so difficult?

## CHAPTER TEN

### NATURE STUDY

#### FOREWORD



**EDUCATIONAL VALUE.** The importance of nature study has been well presented so many times that it is not necessary to give in these pages the specific advantages to be gained from it. Like many other new subjects in education, it has been much abused, and from farmers, parents and superintendents of schools there has been just criticism of the weaknesses manifest in teaching it. Effort must be made by all educators to establish sane, wholesome, virile instruction that shall accomplish the purposes for which nature study has been made a part of every well-organized school curriculum. Following are some facts that should be kept in mind if the work is to be worth while:

1. Nature study is a study of nature. Simple as this appears, in many instances it has not seemed to be understood. Nature study has its greatest value when natural objects and phenomena are studied out-of-doors. It must not be lost in outlines, nor books, nor charts, nor pictures, nor stuffed birds, nor dead insects. It is the study of things as they are, and, whenever possible, in places in which they belong. If class work can not be given out-of-doors, let material be collected by the pupils. Encourage observational work in the open. Nature must provide the material for lessons that are worth while. It can not be made in print shop or factory. Educational results are gained by observation, patient inquiry, experiment, research.

2. Nature study is based on truth, not imagination, not sentimentality. It has interest of its own and need not be introduced by fairy or goblin.

3. Nature study deepens the child's touch with natural objects and forces and develops mind and soul and body by means of things that he has known from the beginning. His baby eyes blinked at the sunbeam; his tiny finger pointed to the moon; his hand reached out for a flower; he helped to make a garden; and did he not follow the winds and call to the birds and play with the sands of the sea?

4. Nature study lays the foundation for the greatest of all industries, agriculture; an industry that is absolutely essential to national prosperity; an industry in which every child, as producer or consumer, is an economic factor.

5. One nature lesson well taught will go farther than a great number of lessons treated superficially and inaccurately.

6. Nature study material can be used for language lessons, drawing, geography—in fact, for nearly all school work. In correlating nature study lessons with other subjects in the lower grades, care must be taken to avoid too much of any one subject. A little child even when he reaches the third grade needs variety and should have opportunity to let his mind go back into some natural channel that belongs to his individual way of thinking. In this connection it would be well for the teacher to read the following poem, and to read it again and still again. It is good pedagogy for the nature teacher:

#### THE CHILD'S REALM

BY L. H. BAILEY<sup>1</sup>

A little child sat on the sloping strand  
Gazing at the flow and the free,  
Thrusting its feet in the golden sand,  
Playing with the waves and the sea.

I snatched a weed that tumbled on the flood  
And parted its tangled skein,  
I traced the course of the fertile blood  
That lay in its meek vein;

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<sup>1</sup>Director New York State College of Agriculture, Ithaca, N. Y.

I told how the stars are garner'd in space,  
How the moon on its course is roll'd  
How the earth is hung in its ceaseless place  
As it whirls in its orbit old:—

The little child paus'd with its busy hands  
And gaz'd for a moment at me,  
Then dropp'd again to its golden sands  
And play'd with the waves and the sea.

7. In every school subject the practical side of the child's development must be a consideration. He must not, because of any scholastic aristocracy on the part of the teacher, be unable to make his contribution to human needs and to know the joy of work well done. There is splendid dignity in preparing a practical man or woman for a life work. This secured without neglect of the thought and study that quicken the spirit, gives an all-round fitness for life to which every child has a right. Nature study offers a rich, practical field for educational purposes. It should be used whenever possible.

8. The teacher in the first three grades should remember that she is leading the child into nature sympathy and understanding and that she is *not teaching science*. If the work is based on truth, there need be no fear of the criticism of the scientist. Through nature, sympathy and observation the little children will have foundation for science and for scientific agriculture, by developing a live interest in growing things, and in studying the relation that these natural objects bear to forces and phenomena in nature. Simplicity of instruction will be the safest course to pursue.

It will be better to err in the direction of teaching too little in nature study rather than too much. Consider carefully the voice that can speak with authority on this subject, in that of John Burroughs, who says:

I am not always in sympathy with nature study as it is taught in the schools. Such study is too cold, too special, too mechanical; it is likely to rub the bloom off nature; it misses the accessories of the open air and its exhilarations, the sky, the clouds, the landscape, and the currents of life that pulse everywhere.

CHILDREN AROUND THE NATURE STUDY TABLE



Vertical text on the left edge of the page, appearing to be a list or index of items.

9. Teach the things that have relation to the daily lives of the children. In every instance possible the boys and girls should form habits of making observations in the open. In rural districts and in villages this can be done, and all material can be secured by the pupils. In congested city districts the close and familiar observations must be made indoors. With trolley systems, however, and with the aid of boys in the grammar schools and high schools, much good material can be brought into the school from week to week. Do not fail to ask the older boys and girls to help in collecting nature study material. It will be good for them, and the result will be that many interesting specimens will be furnished for the lower grades.

Some thinking people doubt the value of trying to teach children subject-matter in nature in the congested city districts, but a study of life is always worth while, and even canaries, gold fishes, and kittens are better than nothing at all for the little children to know, to love, and to care for. Good observation as well as the humane treatment of animals can be taught through such experience. In addition to the study of animal life there is abundance of opportunity for plant study in the city, and fortunately buildings can not shut out some of the great natural forces and phenomena.

**2. Qualifications of a Good Teacher.** What qualifications should the teacher have? At least he requires the nature sympathy that every human soul needs to keep him near to his highest self: response to the sun and wind and rain; to starry night and moonlit wood; to brook and lake and ocean; to wayside flowers; to moss and fern; to the smell of plowed fields; to the mystery of a seed; to the glory of orchard in bloom or in harvest; to level sunlit corn lands; to far-reaching timothy fields; to the song of early birds; to the dawn of a new day. All these things come with the love of nature; but the nature study teacher should have more than love of nature. Accurate nature knowledge, however simple it may be, is essential. Many teachers



have obtained this preparation themselves, with the aid of their pupils and a small working library. This is a good way to obtain it. Each quest opens many new lines of thought; interest deepens as the list of discoveries lengthens.

Perhaps equally important with love of nature and nature knowledge is the need for the nature teacher to root out the notion held by some persons that education in nature can not come through practical things. The grains, the grasses, the clovers, the vetches, the fruit trees, the grape vines, the garden crops, the farm animals and all the rest, have a rich educational value that can not be questioned. The pastoral outlook is full of beauty, of truth, of resource, of economic import. Why lose all this? A qualification of the nature study teacher is to know that natural objects of economic importance are to some children the most interesting of all. When this interest manifests itself in the first three grades it should be encouraged.

**3. Equipment for the Teacher.** The teacher will not need costly equipment for nature study lessons in the lower grades. The mental equipment is the most essential—the realization of the importance of the study; the necessity of collecting information first hand to teach it. The following will be valuable:

1. A copy of *The Nature Study Idea*, by Liberty H. Bailey. MacMillan Co. A thorough reading of this book will prevent any teacher from becoming warped by an artificial attitude to nature study teaching.

2. *Nature Study and Life*, by Hodge. Ginn Co. This book is practical, wholesome, and full of spirit. It gives material for specific instruction, all of which is worth the while and all of which has relation to the child's life.

3. A copy of Stevenson's *A Child's Garden of Verses*. Charles Scribner's Sons. For the primary teacher this book is indispensable. It touches child life in a literary way. Memory selections taken from this work are far more desirable than the many poems published for little children that do not have a fundamental literary value. Through these

poems some of the influences may be given to the child that helped to develop the sensitive, deep, responsive spirit of Robert Louis Stevenson. Among the most charming of the poems are *My Shadow*, *The Cow*, *The Wind*, *The Sun's Travels*, *The Lamplighter*, *The Moon*, *The Hayloft*, *Farewell to the Farm*, *Nest Eggs*, *The Flowers*, *Summer Sun*.

4. One pair of good opera glasses or field glasses. Bird study is important and interesting in the lower grades. As soon as possible a teacher should become familiar with the common birds, with their habit of flight, with their notes. An opera glass helps in the study.

5. Field clothing: one rubber coat; one pair of water-proof shoes; one rainproof hat. No teacher can give good instruction in nature who has not learned to find the out-of-doors in all kinds of weather.

6. A botany can.

7. A trowel.

8. A pair of shears.

9. A jackknife.

10. A library that grows slowly, but with interest in each book. Decide the first year to make a serious study of one subject—trees, flowers, birds, garden plants, farm crops, farm animals, insects, or any other. Let the book be used when the out-of-door study has awakened inquiry.

11. A notebook. The teacher should have a notebook in which is kept a record of all outdoor observations and important facts relating to such observations found in reference books. The notebook should be indexed. Every teacher should keep such records. They will be valuable if she remains in school work, and equally valuable in any walk in life.

4. **Equipment for the Schoolroom.** 1. A wall table that can be raised and lowered.

2. A terrarium (pages 330 and 331).

3. An aquarium (page 334).

4. A cricket cage (page 335).

5. Tripod lens (page 335).

6. Basket (page 335).
7. Flower pots.
8. A teakettle and spirit lamp (page 336).
9. A few strong pasteboard boxes, labeled.
10. A few yards of cheesecloth.
11. Two or three sets of small garden tools.
12. A simple table service for two persons—toy or full-size dishes.

**5. How to Use the Schoolroom Equipment.** 1. **THE WALL TABLE.** A corner or one side of the schoolroom might well be reserved for nature study objects of interest. Children are constantly bringing things into the schoolroom, and these should be so placed and cared for that they will give the least trouble to the teacher. A stationary wall table made of smooth boards on brackets will be satisfactory.



THE WALL TABLE

A village or city carpenter or some one in the rural district who is handy with tools will be glad to help the teacher to secure this convenient and essential piece of furnishing. A table on hinges that can be let down on occasion is even more convenient for small schoolrooms. The children should be taught to keep the wall table in order. On it can be

kept a few French glass bottles with flat sides as shown in the illustration. These are useful for the study of live insects and can be passed around the class for observational work. The restless boy can be sent out with one to find some insect for study—bee, beetle, caterpillar. The bottles can be purchased of any druggist for 50 cents a dozen. They are better than round bottles, because the flat sides will not distort the appearance of the insects and other forms of life that are placed in them. The aquarium jar and cricket cage can be kept on the table. Here also can be kept the birds' nests that the children find; also, the nests of hornets and the homes of other wild things. There should be a scrap book on this table made by the children in which are placed nature pictures of objects already studied. One of the most valuable factors in the use of the table will be to have the boys and girls keep it in order, thereby teaching a lesson in housekeeping. This will often give occupation for restless spirits.



2. A TERRARIUM. Every school should have a terrarium. A more simple one than illustrated on pages 330 and 331 will answer the purpose, but even if the children construct one they should be helped to make it as attractive as possible. In the terrarium many forms of life can be housed as comfortably as if they were out-of-doors. During the year toads, frogs, tree frogs, bats, salamanders, turtles, snails, butterflies, moths, and other animal life may be kept in it, and the children will find them an endless source of joy.

In spring and fall the preparation of the terrarium for visitors from the out-of-doors will open the way for some good work. In many cases the children will be able to collect the material needed—stones, soil, small plants, ferns, and any growing thing that will live for a while and make a woody place for the wild life. There should be a dish

of water when some forms of animal life are in the terrarium. Little children enjoy calling this a pond. Following is an account of a successful terrarium that will illustrate some of its uses:

Children of six, seven, and eight years took active interest in this miniature outdoor world. The bottom of the ter-



A MODEL TERRARIUM

Drawn from Photograph

rarium was covered with stones. The children were asked to collect as many different kinds as possible; some were flat rocks, some pebbles, and some were pieces of fossiliferous limestone which aroused much interest when the fossil forms were noticed. The simplest kind of observation of

these stones was made. Next some soil was placed over a large part of the surface of the stones. Then a nook was prepared with moss and ferns. The children were instructed to bring small pieces of different kinds of moss, if possible. A few seedling trees were added, the children being taught the value of thinning seedling trees that are very close



Drawn from Photograph

#### MANY INTERESTING ANIMALS VISIT THE SCHOOL

together, leaving the strongest room to grow. A small hemlock; a tiny maple; a tulip tree with a leaf or two; a seedling that nobody knew, not even the teacher, were brought to school. The tallest and strongest boy brought a thistle for the butterflies, which gave a good opportunity

to study a troublesome weed; a little maid asked to sow some grass seed for grasshoppers; a young naturalist suggested a water plant for the pond. The vegetation had to be replaced from time to time, but this gave opportunity for the teacher to ask to have an oak tree, a different kind of fern, or some weedy plant, naming a particular kind, in order to give interest to the quest.

During the year many interesting animals were inmates of the terrarium. In fall and spring, toads, salamanders, turtles, caterpillars, butterflies, potato beetles, a little "upside down bat," and other forms of life. Care was taken to avoid housing foes together, such as the turtles, salamanders, and toads. An annex to the terrarium was always on hand for temporary quarters for one of the animals. Demonstrations given by the natural enemies of injurious insects, however, were not avoided. In winter the terrarium was cleaned out and the following guests came into the comfortable quarters for a few days each: A hen, a cock, bantams, a guinea pig, a rabbit, a pigeon, a kitten, a puppy.

The terrarium was made high, because used for children in the lower grades. It is best not to have the animal life handled too much by the little folk. The older boys and girls took special interest in caring for the terrarium, and the younger children looked forward to the privilege in the future.

In this terrarium the toad was the best loved visitor. He more than paid his board and lodging. The teacher knew about toads and so named him Bufo. Every child learned that it was safe to handle Bufo, that he could not share his warts with them if he would; and finally the children took turns in taking him home to spend the night. He thrived, and, if anything, was overfed. Bufo, all motionless, was in the terrarium one day, when a cabbage butterfly evidently took him for a bit of rock or log lighted on his nose, and was gone in the twinkling of an eye. The children saw this demonstration of his helpfulness in the garden. Since cabbage butterflies and other injurious insects

must go, there is no quicker method than by way of a toad. The children decided that toads would make good assistant gardeners.

The salamanders were very interesting. No other small creatures became greater favorites and gave less trouble than the salamanders. They helped the children to overcome a fear of wriggling things. The most sensitive child soon wanted to handle them and do her part toward taking care of them.

Each form of animal life in the terrarium during the year made its contribution to the education of the children, and many interesting and economic facts were mastered by means of direct observation. The terrarium was the center of nature study interest. The inmates had personality and the children gave them names. There was "Bufo," the toad; the turtle was called "Solomon"; the brown and black caterpillar, "Fuzzy"; the butterfly was "Gauzy"; the bantams, "Nip and Tuck"; the old hen, "Biddy."

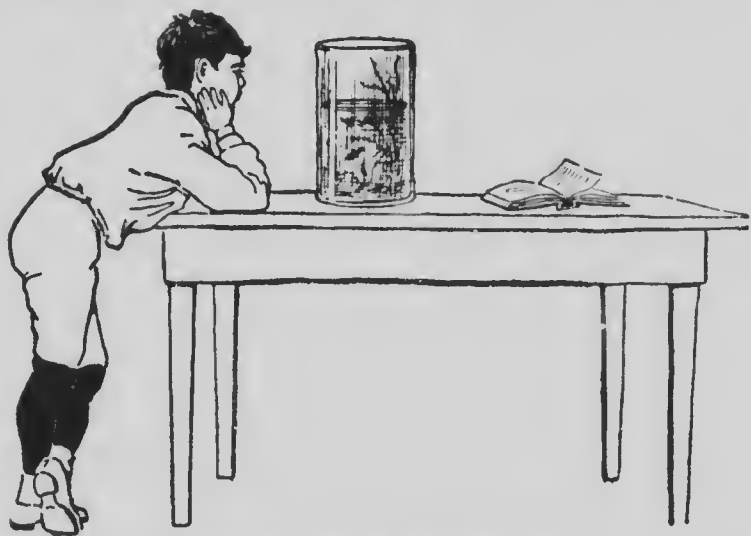
In preparing for the coming of the larger forms of animal life the children took much interest. The terrarium was cleaned, borax was scattered over the floor, and over this were spread "rugs" of newspapers made by the boys and girls. A fundamental idea for cleanliness was thus presented in a natural way. While the rugs were being made the teacher spoke of the many uses for borax in the home.

*It is worth while to have a terrarium. Any enclosed bit of earth on which things will live and grow will do.*

3. AN AQUARIUM. A successfully balanced aquarium is the exception rather than the rule, unless the one who makes and stocks it has been taught how to do it. It is difficult to keep an aquarium balanced, particularly if the children have access to it, and are constantly interfering with the life. Some teachers of wise judgment seem to consider it best to have an aquarium jar and study one form of aquatic life at a time, particularly in the lower



grades. This does not give ideal opportunity to demonstrate aquatic life, but it makes a good beginning. It will interest a teacher who has never had any experience in this work to find how much one fish will contribute to the life of the schoolroom. A teacher not given to exaggeration made the statement that a bullhead in the aquarium jar in school did much toward maintaining discipline. This bullhead was called "Billy," and certainly was worthy of

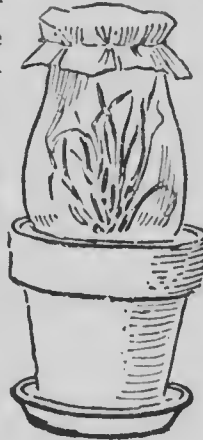


STUDYING LIFE IN THE AQUARIUM

a name other than the one given him in nature. There was not a characteristic that Billy had that escaped the children. They were allowed to stand about the aquarium jar when lessons were learned, and the teacher said she often wished there was one bullhead for each child. The little sunfishes, sticklebacks, shiners, Johnny darters, and other fishes will survive a long time, if each one is kept by itself, in fresh water, and properly fed. Prepared fish food, a bit of meat, insects, and worms will be best, in quantities that can be consumed in the day. The amount will depend entirely on the size and species of fish and will be best deter-

mined by experiment. Each day remove food not consumed and soon the proper amount can be estimated.

4. A CRICKET CAGE. This simple apparatus is made with a flower pot and a lantern globe covered with a piece of cheesecloth held in place by a rubber band. Planted to grass seed, it will make a dwelling place for many forms of life—crickets, grasshoppers, daddy long legs, spiders and other small creatures.



CRICKET CAGE

5. A TRIPOD LENS. This is the best magnifying glass for young children. They will enjoy looking at a house fly, a mosquito, a potato beetle, a bit of moss, a snowflake, a single flower of one of the *Compositae*, or the heart of a rose.

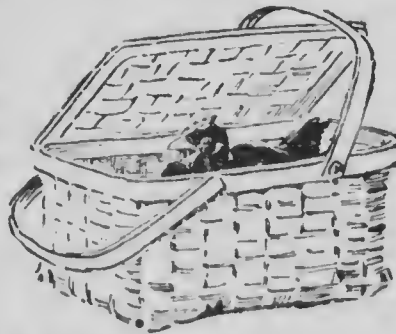


TRIPOD LENS

6. BASKETS. There is scarcely any limit to the use of baskets in the schoolroom.

In the nature study lessons they can be used for flowers, for collecting seeds, and for specimens of stone, soil, and other outdoor things. A dish with a flower

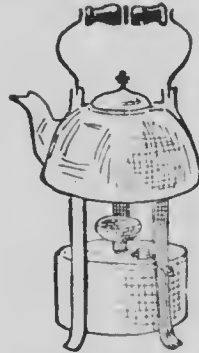
holder placed in a basket gives opportunity for the most artistic arrangement of flowers. The large covered basket with two handles is indispensable. Two restless children can be sent with it for some animal for the terrarium—a hen, a rabbit, a little duck. The basket will make transportation safe and easy. It can also be



A COVERED BASKET IS VERY USEFUL.

used in many kinds of collecting along wood and wayside. Flower pots will be valuable in many ways—for test-tube seed, growing plants, and the like.

8. **A TEAKETTLE AND SPIRIT LAMP.** A teakettle has an intimate association for nearly every child. It is a touch of home that can be brought into the schoolroom. Charles Dickens and Hans Andersen knew the companionship of teakettles and like homely objects. Have the children keep the kettle bright and clean and when used for simple experiments be sure the children hear it sing, that they watch the steam, and learn to know when the water is really boiling.



TEAKETTLE AND  
SPIRIT LAMP

9. **BOXES.** A few strong pasteboard boxes will be found useful for keeping specimens and compositions out of the dust. Have them labeled, and arrange the contents of each box neatly.

10. **CHEESECLOTH.** As a part of their nature study work the children should be taught how to dust and why dusting is essential. Dusting with a moistened cloth which is washed after it is used is not practiced in many homes. It is a most important thing to learn. See *Nature Study and Life*, page 476. Small pieces of cheesecloth hemmed by the children and kept clean will be useful in taking care of the animal life and in covering cages for insects and the like.

11. **GARDEN TOOLS.** If there is not a garden equipment for use of the school, the teacher should have two or three sets of small but well-made tools. A rake, hoe, and trowel will many a time provide outlet for a restless boy or girl and a needed piece of work near the school building can be done. The tools should always be cleaned and hung up after using. This will give an added lesson that will educate.

12. **FOR THE HOME.** Teach simple table decoration by having one child each week set the table and furnish simple decoration for it from his garden or from wild plant life. Emphasize the advantage of a small, low decoration for the center of the table. Teach the value of the tiny hemlock cones, barberry, bitter sweet, a spray or two of the more

delicate asters and golden rods, and other plants for making the table attractive.

### Nature Study Subject-Matter

**6. Nature on Every Hand for Study.** The following suggestions for subject-matter have been made with as broad a nature outlook as possible. Teachers in the villages can do less than teachers in the country, and teachers in the cities still less than those in the villages. At the same time, there are very few of the topics presented which the city teacher will be unable to use in some way. A touch with nature here and there will go farther than is at all times realized. A city teacher who will read *Nature in a City Yard* by Charles M. Skinner (The Century Co., \$1.25), will learn how much of real nature is at hand even in districts in which great buildings seem to meet the sky. Perhaps the teacher in the village has the largest responsibility in this work, because boys and girls in the smaller communities have neither the absorbing interests of the great city nor yet the busy life of the farm. Leisure without guidance is fraught with greatest danger. The more village children can be directed natureward the better.

The subject-matter has not been graded into first, second, and third year work. Nearly all the suggestions given have been successfully used in some form from the kindergarten to the fourth year. The teacher must decide what to use for each year, and how much. The instruction in the first three grades will not differ greatly in kind, but in degree.

#### I. NATURAL FORCES AND PHENOMENA

Passengers on the Cosmic sea,  
We know not whence nor whither;  
'Tis happiness enough to be  
In tune with wind and weather.

—L. H. BAILEY.

**7. Sunshine; Shadow; Dawn; Twilight; Night.** It is in the first three grades in school that children are getting much

of the foundation for their attitude toward life. They should be taught to be in tune with wind and weather; with the changes of day and night. Some plan similar to the following will help to accomplish this:

The sun is a great factor in the day. It must not be crowded out by lesser interests. Occasional morning talks should include the place of the sun in the lives of the boys and girls, in the lives of the birds, in the lives of the farm animals and plants. Let the children close their eyes and think of pictures of dawn. How the color comes into the east; the old cock wakes up the young folks and the old folks; the gray light creeps in at the window; the thrush sings; the little brown calf in the barnyard looks around; and the day has begun. How good the sunlight is for every one—for boys and girls and men and women and for all the living things. It comes into our houses to chase out diseases, into the barns to keep them healthful for cows and horses, into the poultry houses so that the hens that do so much for us may keep well. Sweet, fresh air, warmed and purified by the sun, is essential to all life. It must be welcomed into the schoolhouse and the home. Have the children learn the following:

#### SUMMER SUN

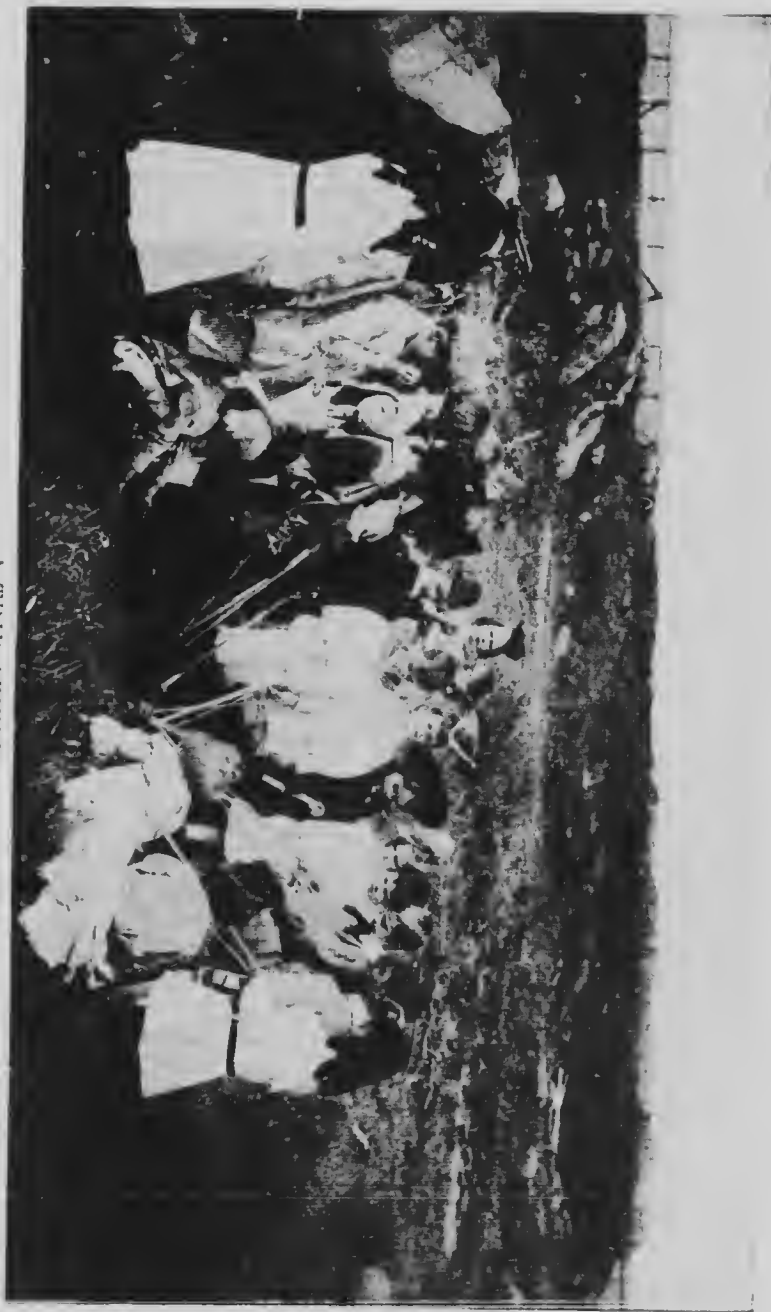
ROBERT LOUIS STEVENSON

Great is the sun, and wide he goes  
Through empty heaven without repose;  
And in the blue and glowing days  
More thick than rain he showers his rays.

Though closer still the blinds we pull  
To keep the shady parlour cool,  
Yet he will find a clink or two  
To slip his golden fingers through.

The dusty attic, spider clad,  
He, through the keyhole, maketh glad;  
And through the broken edge of tiles,  
Into the laddered hayloft snakes.

A TRIP AFIELD





Meantime his golden face around  
 He bares to all the garden ground,  
 And sheds a warm and glittering look  
 Among the ivy's inmost nook.

Above the hills, along the blue,  
 Round the bright air, with footing true,  
 To please the child, to paint the rose,  
 The gardener of the world, he goes.

(Courtesy of Charles Scribner's Sons.)

In teaching sunshine, one must always bring to the mind of the child the possibilities of interest in shadows. Their own little shadows and when they can find them; the shadows of the trees, of the church tower, of the wayside plants, of the currant bushes. While interested in sunshine and shadow, the children will enjoy this poem:

### MY SHADOW

ROBERT LOUIS STEVENSON

I have a little shadow that goes in and out with me,  
 And what can be the use of him more than I can see.  
 He is very, very like me from toes up to the head;  
 And I see him jump before me, when I jump into my bed.

The funniest thing about him is the way he likes to grow—  
 Not at all like proper children, which is always very slow;  
 For he sometimes shoots up taller like an india-rubber ball,  
 And he sometimes gets so little that there's none of him at all.

He hasn't got a notion of how children ought to play,  
 And can only make a fool of me in every sort of way.  
 He stays so close beside me, he's a coward, you can see;  
 I'd think shame to stick to nurse as that shadow sticks to me.

One morning, very early, before the sun was up,  
 I rose and found the shining dew on every buttercup;  
 But my lazy little shadow, like an arrant sleepy-head,  
 Had stayed at home behind me and was fast asleep in bed.

(Courtesy of Charles Scribner's Sons.)

And before going home, the teacher should once in a while lead the children to talk about the oncoming night.



This gives a time for deepening love of home pictures: the mother at the window sewing; the preparations for supper; the sunset; the twilight (this word should become a part of the child's vocabulary); the first star seen from the window. Ask the boys and girls to look at the stars and the following morning ask about a star or planet in the east or the west. Who saw it? Who will look for it to-night? Ask them to have their father show them the Great Dipper, or some simple constellation, that will interest them in looking up into the night sky, and if possible in having father or mother look with them.

8. **Rain.** The rainy day comes. It should be made the most interesting day of all.

The soft, gray rain comes slowly down,  
Settling the mists on marshes brown,  
Narrowing the world on wood and hill,  
Drifting the fog down vale and rill.  
The weed-stalks bend with pearly drops,  
The grasses hang their misty tops,  
The clean leaves drip with tiny spheres,  
The fence rails run with pleasant tears.  
Away with care, I walk to-day  
In meadows wet and forests gray.

—L. H. BAILEY.

Unfortunately, rain is depressing to many persons who have not learned to be "in tune with wind and weather." The children hear the day called gloomy and disagreeable, from the time they open their eyes. The schoolroom looks dark. On such days the regular program may be changed. Everything should be made neat and clean; the rain is washing everything outside. The teacher is not gloomy. She has learned to love the restfulness of the gray day and has found new wonder in the out-of-doors, when rains and leaden skies change color and spirit in field and wood and highway, or in the city street. Children are imitative. They, too, will meet the rain. How grateful it is to the plants! John has rubber boots and a "slicker." He will like to put out all the little schoolroom plants for an hour or two. How every-

body enjoys hearing the rain fall on the roof! Little heads rest on the desks and with closed eyes, every one listens. Rain on the roof is a kind of music. When boys and girls were little babies, it probably put them to sleep many times. It falls so softly on the back of the robins and on the cows in the pasture. It is filling the rills that fill the brooks that flow on to the rivers.

The rain is raining all around,  
It falls on field and tree,  
It rains on the umbrellas here,  
And on the ships at sea.

—ROBERT LOUIS STEVENSON.

The young children will enjoy a simple experiment to demonstrate rainfall. The vapor rises. The clouds form.



FORMING RAINDROPS

Moving in the heavens the clouds sooner or later strike cold currents of air and the moisture is condensed, making the raindrops. The illustration will explain a simple way to have the children demonstrate this.

Try to have the rainy day happy in the schoolroom and send the children home with new joy in their hearts, with new understanding of gray skies, and glad to have the raindrops fall on their upturned faces.

### 9. Snow.

With winly haste and wild halloo the sheeting snow comes down  
And drives it off through bush and swale and leagues of stubble brown.  
Blessing on the waiting fields when the sheeting snow comes down.

—L. H. BAILEY.

When the first snow falls, if possible let the children run out into it for a few minutes. The whole magic of this winter joy should be theirs. Have them notice the snowflakes that fall on their coats. Let them look at them through the lens. How many points has each snowflake? Through the days of freezing and thawing, simple observations will suggest themselves to the teacher. The icicles will hang from the roofs. The trees and plants will hold the snow in different ways. A bird's nest will be filled with the white flakes. One side of the tree trunks may be snow laden; which side? Why? The brooks will freeze along the edges first; why?

The midnight frolics of the wood folk are revealed; how? The tracks of rabbits and mice are soon learned by little children who have an opportunity to see them a few times. The telltale snow has an interest. The teacher might occasionally ask such questions as the following: When it is snowing very hard and the garden path has not been shoveled, can you tell whether Grandfather or Aunt Jane or little Bob came to your kitchen door? How? Can you tell whether Rover jumped over the fence or came in at the gate? Can you tell from the tracks of sparrows whether they hop or walk? Watch Bunny hurry over the snow; what kind of track does he make?

There are a few rhymes of winter that children will always love and that are worth while to memorize, one of which is:

## THE LITTLE ARTIST

Oh, there is a little artist  
 Who paints in the cold night hours  
 Pictures for wee, wee children,  
 Of wondrous trees and flowers.

Pictures of snow-capped mountains  
 Touching the snow-white sky;  
 Pictures of distant oceans,  
 Where pygmy ships sail by;

Pictures of rushing rivers,  
 By fairy bridges spanned;  
 Bits of beautiful landscapes,  
 Copied from elfin land.

The moon is the lamp he paints by,  
 His canvas the window-pane,  
 His brush is a frozen snowflake;  
 Jack Frost is the artist's name.

—From *Nature in Verse* (Silver, Burdett & Co.)

The above will suggest some teaching on the work of the frost. Practical things will suggest themselves in this connection through the winter days. The protection of animals and crops and many other farm practices have to do with frost. Have the children get into the spirit of letting Jack Frost in often by airing the schoolroom and keeping the windows of their bedrooms open at night.

**10. Clouds.** Days without clouds are rare; yet there is no monotony in cloudland. The variations in size and form are endless. What child has not lain on his back in the sweet summer meadow and watched a particular cloud in its passage across the sky and in its gradual change of form? His imagination has seen strange faces and figures in the clouds, and they opened a new realm of thought to him. He can learn how clouds are formed and can wonder as they appear and disappear.

There are the fall clouds, so full of the promise of keen, cold Thanksgiving weather. Many a time the little children should be taken out to stand a few minutes under the

changing skies, considering whether the clouds might bring rain or snow or whether they might be blown over by great winds. The teacher need make no effort to express enthusiasm. If a cloud is beautiful the little child will respond to it, and he should be kept near to the things that he looked at even before his school days. It is worth while to be weather wise, and interest in clouds and in the changes of temperature will help in this.

### 11. Wind.

Learn to love the music of the wind. It is a voice that never sings false. You are never small when you listen to it.—SKINNER.

There is something clean and wholesome about the wind, and it can be made a valuable character builder. Little children love to brace themselves against it and to feel it blow the color into their cheeks and the cobwebs out of their brains. There is no other force in nature that inspires such confidence and freedom as the wind.

How attractive the old weather-cock is! If there is one in sight let the children have an opportunity to discuss it with the teacher. The older children can tell the direction of the wind and learn some of the things that the weather-cock can teach. Let them learn Stevenson's poem, *The Wind*. It is full of good spirit:

### THE WIND

ROBERT LOUIS STEVENSON

I saw you toss the kites on high  
 And blow the birds about the sky;  
 And all around I heard you pass,  
 Like ladies' skirts across the grass—  
     O wind, a-blowing all day long,  
     O wind, that sings so loud a song!

I saw the different things you did,  
 But always you yourself you hid,  
 I felt you push, I heard you call,  
 I could not see your self at all—  
     O wind, a-blowing all day long,  
     O wind, that sings so loud a song!

O you that are so strong and cold,  
O blower, are you young or old?  
Are you a beast of field and tree,  
Or just a stronger child than me?  
O wind, a-blowing 'l day long,  
O wind, that sings so loud a song!

(Courtesy of Charles Scribner's Sons.)

How many teachers have considered the value of kite flying? The hand work; the fresh air; the part played by the wind; the background of clouds; the solitary amusement.

**12. Sound.** Nature has much to contribute to one whose sense of hearing is trained. The ear should be cultivated, and this should be done in childhood. Many of the most wonderful sounds are lost to all but the one who truly listens: the rustling leaf; the fall of an apple; the voice of the tree frog; the early morning breeze; the splash of the rill.

Simple lessons in listening may be given to advantage in the lower grades, and they are particularly valuable in the out-of-door work. The autumn sounds are all interesting and many in spring are full of beauty. Let the children close their eyes and listen to the sounds that come in at the open window. Such a test made in a third grade class led to the following list: a crow; a cat; a town clock; Jimmie's little sister crying; a robin; a humbee; a sneeze; horses' feet on the road; a hen; a little chippy bird; Mr. O'Brien's cough.

Have the children go out-of-doors once or twice a week for a few minutes and listen. They will get a breath of fresh air and their power to hear will increase.

## II LANDSCAPE FEATURES

**13. What to Teach.** How much that child eyes looked upon becomes the near companion of maturer years! The stately mountain, or the hill that to the child looked like one; the sunlit valley; the woodlot; the forest; the brook; that long white road leading to another world of interest

and perhaps mystery. Any landscape feature can be made the subject for good nature study, ever changing as it is in color, in the life about it, often in its general character



A LANDSCAPE STUDY

It is in connection with landscape features that the field trips are most valuable. Large numbers of teachers throughout the United States and Canada have been successful in field trips with little children, and at least one or two should be made each year. A walk with the teacher! this is one of the greatest of all joys. A trip to the autumn wood; to the brook in springtime; along the white bordered road in winter. To spend an afternoon on "our hill," in "our wood," or beside "our brook" with the plants that grow there; the round of life that little children love.

**14. A Type for Study.** Sometimes it is well to select one feature for the year's work. This may be a brook. Liberty Hyde Bailey says:

"A brook is the best of subjects for nature study. It is near and dear to every child. It is a world in itself. It is an epitome of the nature in which we live. In miniature it illustrates the forces which have shaped much of the

GOOD MATERIAL IN LANDSCAPE STUDY





earth's surface. Day by day and century by century, it carries its burden of earth-waste which it lays down in the quiet places. Always beginning and never ceasing, it does its work as slowly and as quietly as the drifting of the years. It is a scene of life and activity. It reflects the sky. It is kissed by the sun. It is caressed by the winds. The minnows play in the pools. The soft weeds grow in the shallows. The grass and the dandelions lie on its sunny banks. The moss and fern are sheltered in the nooks. It comes one knows not whence; it flows one knows not whither. It awakens the desire for exploration. It is a realm of mysteries. It typifies the flood of life. It goes 'on forever.'

"In many ways can the brook be made an adjunct of the schoolroom. One teacher or one grade may study its physiography; another its birds; another may plant it. Or one teacher and one grade may devote a month or a term to one phase of it. Thus the brook may be made the center of a life-theme."

Where does the brook begin? No one knows, perhaps. The geography of the brook will need much study. How wide is it at its widest point? Are there islands in it? Peninsulas? Have the children count the different kinds of plants that grow in the brook and along its banks. Take some specimens back to the school. If the teacher does not know the names of these plants, the quest for the names will be interesting. Any botany teacher will help, or specimens can be sent for identification to an agricultural college or experiment station.

The animal life of the brook may be studied throughout the year, after the field trip gives the first interest in it. New discoveries should always be commended and the young naturalist encouraged to himself show what he has found and where he found it. The French glass bottles will help in this work. (See page 320).

Brook joys should not be neglected in this lesson. How the cattle like to stand in the cool water and to drink from it! How cheerfully the ducks become a part of its rippling

surface, and the while sunlight falls on their soft feathers and yellow bills! How little children love to wade in it!

And best of all is the music of a running stream. Whittier, speaking of his boyhood's brook, says:

The music of whose liquid lip  
Had been to us companionship;  
And in our lonely life had grown  
To have an almost human tone.

Have the children listen to this music some spring afternoon. Teach them some of the lines from Maurice Thompson's *In the Haunts of Bass and Bream*, (used here by permission of his publishers, Houghton Mifflin Co.)

Go with me down by the stream,  
Haunt of bass and purple bream;

Feel the pleasure, keen and sweet,  
When the cool waves lap your feet:

. . . . .

The busy nuthatch climbs his tree,  
Around the great bole spirally,

Peeping into wrinkles gray,  
Under ruffled lichens gay,

Lazily piping one sharp note  
From his silver mailed throat;

And down the wind the catbird's song  
A slender medley trails along.

Here a grackle chirping low,  
There a crested vireo;

Deep in tangled underbrush  
Flits the shadowy hermit-thrush;

Cooes the dove, the robin trills,  
The crows caw from the airy hills;

Purple finch and pewee gray,  
Bluebird, swallow, oriole gay,—

Every tongue of Nature sings;  
The air is palpitant with wings!

. . . . .

Bubble, bubble, flows the stream,  
Like an old tune through a dream.

. . . . .

A big blue heron flying by  
Looks at me with a greedy eye.

I see a striped squirrel shoot  
Into a hollow maple-root;

. . . . .

Bubble, bubble, flows the stream,  
Like a song heard in a dream.

The suggestions for the brook will help the teacher to seek the possibilities for study in some other natural feature that may be present instead of a brook.

### III. PLANT STUDY

#### 15. Gardens.

A garden is a lovesome thing, God wot!  
Rose plot  
Fringed pool  
Terned grot  
The veriest school  
Of peace; and yet the fool  
Contends that God is not—  
Not—God! in gardens! When the eve is cool?  
Nay, but I have a sign;  
'Tis very sure God walks in mine.

—THOMAS E. BROWN.

In many schools little children are kept in close rooms all day long—little children between the ages of six and

nine years; away from the things that are their birthright, air and sunshine and robin note and green things growing. What will the generations to come think of us when they learn what was done with the little children of our time by way of education? The children of the future will meet no such fate, but through gardens useful and gardens beautiful they will learn many of the essentials of life; they will become a part of things worth while.

All children, even little folk, should work with their hands every day. All such work should be as carefully supervised as work in arithmetic, and results should be as exact. A garden offers the most wholesome form of work. Every educator who makes effort to strengthen public opinion in favor of gardens for boys and girls is making a valuable contribution to society. Every teacher who interests a child in having a garden is helping him to a better manhood.

The large school garden has failed in many places and it will continue to fail until it is made a part of the school equipment, and is financed in a way to secure success. It should be a place, when school is in session, that will provide work in the open air and also provide plant materials for the many lessons in which such can be used. It should be the laboratory for much of the nature study work. A garden with its vegetables and flowers; its bush fruits; grapevines; herbs; observational plats of grains and grasses; wild gardens; its sundial! What teaching could come by means of such a laboratory, and what development there would be in it for teachers and pupils! The school garden need not be divided into individual plats for boys and girls to own, but it should be a place in which the pupils are taught the fundamentals of garden-making for their home gardens. The school garden should be maintained during vacation and become a center of neighborhood interest. Gardening in connection with schools should be conducted with dignity and responsibility, or not attempted. Many school gardens have been immoral in their influence.

There are thousands of teachers in this country who are teaching children to live by means of outdoor life, including a garden. This is hopeful. No matter how small the piece of ground near the schoolhouse; if teachers and children work together to make it productive the educational purpose is accomplished. If the children learn from this piece of work how and what to plant, and a few fundamental practices relating to soils in gardens, they will want a garden at home. This is a result that counts. If boys and girls begin young enough to work in a garden, and do thorough work, however simple, for three or four consecutive years, it will hardly be possible to keep them out of one. Gardening is a habit and what a valuable habit it is to form! What a wholesome and even holy resource it will give in later years, for in all truth God walks in gardens!

One may do much gardening on a piece of ground two feet square. A window box may provide a garden in cities. A flower pot may give opportunity to educate by means of a plant. A few bulbs indoors or out will provide joy and awaken new thought in ways that experience alone can demonstrate. If the teacher would call a mothers' meeting and explain the viewpoint of educators on the value of a garden in the education of boys and girls, the co-operation of parents will often be secured; and encouraged by teachers, parents, and public spirited citizens, a home garden will appear here and there in the neighborhood.

There is probably not a community in the world in which there is not at least one good gardener or a person who was at one time a gardener. The teacher who wishes to get ready for work of this kind should list a few garden plants in her notebook and consult a gardener or florist about them. A personal talk with a grower of plants will mean more than any number of printed pages. Gardening can not be taught without some preparation, any more than arithmetic. It is so worth while to get ready to teach it. (See, also, Volume Five, pages 74-78).

**16. Plants for the School Garden.** Make a selection of plants from the list given in these pages for the first school garden. Whatever has real interest for the teacher will interest the pupils. Take the list to some one who knows the subject and consult him as to the probability of success in the selection, the varieties to grow in the locality, the preparation of the soil, the questions of moisture, sunlight, time of maturity, and the like. When such knowledge has been collected and thoughtfully considered, the teacher may give instruction in gardening. The facts relating to specific plants given here will serve as reference. The list was suggested by C. E. Hunn,<sup>1</sup> gardener, and has been worked out in connection with children's gardens. The time of planting will vary in different localities; also the varieties to be grown and the hardy character of the plants.

*A list of garden vegetables, the seed of which may be sown as soon as the ground is fit to work in the spring:*

Variety	Time of Sowing	Depth of Sowing	Soil Best
Asparagus	April 2	1 inch	Light Loam
Beets	"	2 "	"
Carrots	"	1 "	"
Chicory	"	1 "	"
Cross	"	2 "	"
Endive	"	1 "	"
Kale	"	1 "	"
Kohl-rabi	"	1 "	"
Leek	"	1 "	"
Lettuce	"	1 "	"
Mustard	"	1 "	"
Onion	"	1 "	"
Parsley	"	1 "	"
Parsnips	"	1 "	"
Peas	"	2 "	"
Rutabaga	"	1 "	"
Rutabaga	"	1 "	"
Salsify	"	1 "	"
Sea kale	"	1 "	"
Spinach	"	1 "	"
Turnip	"	1 "	"

<sup>1</sup> Foreman of Grounds, New York State College of Agriculture, Ithaca.

*A list of garden vegetables, the seed of which should not be sown until the ground is warm and all danger of frost is over:*

Variety	Time of Sowing	Depth of Sowing	Soil Best
Beans	May 10	2 inch	Light Loam
Corn	" 10	2 "	"
Okra	" 20	1 "	"
Pumpkin	" 10	2 "	"
Squash	" 10	2 "	"

*A list of popular perennials. Plants to be grown the previous summer:*

Variety	Time of Sowing	Depth of Sowing	Soil Best
Abutilon (Flowering maple)	May	3 inches	Any well-enriched, well-drained soil
Aquilegia (Columbine)	April	3 "	Light loam preferable.
Bellis perennis (English daisy)	"	2 "	
Campanula (Canterbury bell)	"	3 "	
Canna	May	4 "	
Delphinium (Larkspur)	April	3 "	
Digitalis (Foxglove)	"	4 "	
Gaillardia (hardy)	May	3 "	
Althaea (Hollyhock)	April	4 "	
Poppy (hardy)	"	3 "	
Rudbeckia (Cone flower)	May	4 "	
Helianthus (Sunflower, hardy)	"	3 "	
Sweet William	"	3 "	
All hardy pinks	"	3 "	

*A list of shrubs for garden borders:* Almond (flowering), cornus in variety, elder, forsythia, hydrangea, honeysuckle (bush), japan quince, kerria, lilac in variety, mahonia, privet, roses in variety, snowball in variety, spirea in variety, sumac, weigela, witch-hazel, evergreens, dwarf thuja, retinipora, junipers, Norway spruce, dwarf pine.

*A list of early vegetables that should be started inside in April, and the plants set out as soon as the ground is fit:* Brussels sprouts, cabbage, cauliflower, celery, celeriac.

*A list of late vegetables, the seed of which should be started in April and the plants set out after the tenth of May:* Cucumber, eggplant, melon, pepper, tomato.







SOME OF OUR FAVORITE FLOWERS

*Annual flowers.* The seed should be sown after the danger of frost is over. The best results are obtained if the plants are started in the house in April, and set out after the tenth of May.

Variety	Time of Sowing	Depth of Sowing	Soil Best
Antirrhinum (Snap dragon) . . . . .	May 5 or after	1 inch	Light Loam
Aster . . . . .	" "	1 "	" "
Celosia (Cockscomb) . . . . .	" "	$\frac{1}{2}$ "	" "
Cosmos . . . . .	" "	1 "	" "
Dahlia . . . . .	" "	1 "	" "
Lantana . . . . .	" "	1 "	" "
Myosotis (Forget-me-not) . . . . .	" "	1 "	" "
Ricinus (Castor oil bean) . . . . .	" "	2 "	" "
Salvia (Scarlet sage) . . . . .	" "	1 "	" "
Schizanthus (Butterfly flower) . . . . .	" "	1 "	" "
Mathiola (Stocks) . . . . .	" "	1 "	" "

*Annual flowers.* Seeds to be sown early.

Variety	Time of Sowing	Depth of Sowing	Soil Best
Alonis (Pheasant's eye) . . . . .	April or early May	1 inch	Light Loam
Aceratum . . . . .	" "	$\frac{1}{2}$ "	" "
Alyssum . . . . .	" "	$\frac{1}{2}$ "	" "
Amaranth . . . . .	" "	1 "	" "
Brachycome (Swan river daisy) . . . . .	" "	$\frac{1}{2}$ "	" "
Browallia (Amethyst) . . . . .	" "	1 "	" "
Calendula (Pot marigold) . . . . .	" "	$1\frac{1}{2}$ "	" "
Calliopsis (Coreopsis) . . . . .	" "	1 "	" "
Aethonema (Candytuft) . . . . .	" "	$\frac{1}{2}$ "	" "
Carnation . . . . .	" "	1 "	" "
Centaurea (Bachelor's button) . . . . .	" "	1 "	" "
Chrysanthemum (annual) . . . . .	" "	1 "	" "
Clarkia . . . . .	" "	1 "	" "
Dianthus (China pink) . . . . .	" "	1 "	" "
Euphorbia (Snow-on-a-mountain) . . . . .	" "	1 "	" "
Gaillardia (Blanket flower) . . . . .	" "	1 "	" "
Godetia . . . . .	" "	1 "	" "
Gypsophila (Baby's breath) . . . . .	" "	1 "	" "
Helichrysum (Everlasting) . . . . .	" "	1 "	" "
Lobelia (Cardinal flower) . . . . .	" "	$\frac{1}{2}$ "	" "
Tagetes (Marigold) . . . . .	" "	1 "	" "
Mimouette . . . . .	" "	$\frac{1}{2}$ "	" "
Nasturtium . . . . .	" "	2 "	" "
Nicotiana . . . . .	" "	$\frac{1}{2}$ "	" "

## Annual flowers Seeds to be sown early.—Continued.

Variety	Time of Sowing	Depth of Sowing	Soil Best
Nigella (Love-in-a-mist).....	April or early May	1 inch	Light Loam
Petunia.....	"	$\frac{1}{2}$ "	"
Phlox D.....	"	1 "	"
Eschscholtzia (California poppy).....	"	$\frac{1}{2}$ "	"
Poppy, Shirley.....	"	$\frac{1}{2}$ "	"
Portulaca.....	"	$\frac{1}{2}$ "	"
Pyrethrum.....	"	1 "	"
Salpiglossis.....	"	1 "	"
Scabiosa (Mourning bride).....	"	1 "	"
Lathyrus (Sweet pea).....	"	$\frac{1}{2}$ "	"
Verbena.....	"	1 "	"
Zinnia.....	"	1 "	"

In order to have a good garden, each plant should have room for its fullest development, and since most of the seeds of garden flowers and vegetables are small it is almost impossible to sow the seeds sparsely enough so that each plant will grow to perfection. Since this is the case, the plants must be "thinned," and either thrown away or transplanted to some other part of the garden. If the thinning is done in cool, cloudy weather, the seedlings may be transplanted with great ease; but if it is done in dry, sunny weather, the seedlings must be shaded after being set out. It is best to thin the plants when they are small, before they have become crowded, but if one wishes to save them for transplanting they may be left until large enough to handle. The following will be found helpful to young gardeners in thinning and transplanting:

1. *Flowering plants that should be four inches apart:* Alyssum, ageratum, balsam, candytuft, lobelia, pansy, poppy, portulaca.

2. *Flowering plants that should be six to eight inches apart:* Amaranthus, browallia, carnation, centaurea, dianthus, eschscholtzia, gallardia, mignonette, myosotis, phlox D.

3. *Flowering plants that should be twelve inches apart:* Aquilegia, aster, campanula, calliopis, colosia, helichrysum, heliotrope, larkspur, marigold, nasturtium, "drop," nigella, petunia, salpiglossis, scabiosa, verbena, zinnia, sweet william.

4. *Flowering plants that should be eighteen to twenty-four inches apart:* Canna, chrysanthemum (annual), cosmos, dahlia, delphinium, digitalis, gypsophila, nicotiana, phlox (hardy), salvia, rudbeckia, schizanthus, tritema.

5. *Vegetables that should be six inches apart:* Beet, celery, lettuce, parsnip, parsley, spinach, salsify, turnip.

6. *Vegetables that should be twelve inches apart:* Bean, cabbage, cauliflower, eggplant, endive, kohlrabi, pepper.

7. *Vegetables that may be sown thickly:* Carrot, leek, onion, pea, radish.

8. *Vegetables that should be three to four feet apart each way:* Bean (pole), corn, cucumber, kale, melon, squash.

*Vines.* Make a list of every vine, wild and cultivated, that has thrifty growth in your locality. Find out which will grow most quickly and which are most hardy. Call a meeting of parents and encourage them to help the children in planting vines about the home and school. Vines have a good influence in any community.

**17. Interest in Soils.** In connection with the garden lessons, however small the garden, the teacher should take the opportunity to interest the children in soils. Simple instruction in rocks and minerals can be given at this time, if the teacher has the background for the teaching. Young children can see the way in which soil is being formed from rocks. They can note different degrees of hardness in the rocks, and see some of the forces that are wearing them away.

Have the children bring sample soil from the roadside, garden, wood and other neighborhood places. They can be led to observe the different textures and something of the composition. They can learn what makes a soil rich, and the relation of moisture to the different soils. This work should include familiarity with soils and develop observations that will prepare the boys and girls for more serious work along this line in the fourth and fifth grades.

**18. An Individual Plant.** Every child in the primary grades should have a plant of his own during the year. The boys and girls can provide their own flower pots and in many cases their own little plants. The teacher will find ways to secure a plant for all who have not been able to get one. Small geraniums are as satisfactory as any. Teach the children how one small red geranium and very white curtains make a room cheerful. Teach them that one thrifty plant in clean surroundings will give more joy than many that are not given good care.

Have a plant afternoon and give each child an opportunity to see the individual plants belonging to the class. Which plants look thrifty? What makes a plant look thrifty? With his own plant on the desk have each child write a few statements about it: How many leaves it has; how many buds; how many blossoms; the color of the blossoms; the shape of the leaves. Do not let this exercise become tiresome. Except when real interest can be maintained, nature study records belong to the more advanced grades.

Have the children take their individual plants home for a month and then bring them to school some Friday afternoon. Which plants show the most care? A little wholesome competition with a prize or two might be worked out in connection with such an exercise.

Another valuable plant study might be conducted as follows: Let each child have a flower pot in which good soil is placed. Have him know why the soil is good. Then give the boys and girls a choice of seeds to plant. There should be seeds of vegetables, flowers, and even trees. Some small trees do not look like their parents. The seeds of the ten trees discussed on pages 350-360 will doubtless germinate in flower pots. If there is room and proper heat, keep the individual gardens in the schoolroom; if not, they may be taken home. There will be some interesting and even exciting results. A small green or red watering can will add much to the care of these gardens.

**19. Trees.** One way to prepare to teach trees might be for the teacher to list in her notebook the trees here given, or any other list, and to set herself the task of trying to see each tree, to learn the form of leaf, the kind of blossom, and the fruit. The children in the third grade and even in the second will help in the quest. Begin observations on one of the trees in the neighborhood. Have a box in the schoolroom and encourage the older children to write the observations they make each day, sign the record, and place in the box. At the end of two weeks it will be interesting to learn who has made the largest number of observations.

## LIST OF TREES

<i>Conifers:</i> White pine	<i>Hardwoods:</i> Hard maple
Norway spruce	Soft maple
	Elm
	Beech
	Red oak
	Basswood
	White ash
	Horse chestnut

Descriptions of these trees can be found in any good work on the subject. First study the tree. Have the children make inquiries of their parents as to whether these trees can be found in the neighborhood.

Many teachers are interested in elementary lessons in forestry. Quick reference on this subject may not be easily found. Some of the following suggestions will, therefore, be helpful.

If seeds of the above trees are used for growing seedling trees in flower pots, the following facts, given by Professor Bentley,<sup>1</sup> forester, should be considered:

"The seeds of the soft maple and elm mature in early summer, and should be gathered and sowed immediately if any germination is to be expected. Of the other hardwoods, the basswood and red oak may take some little time to germinate, and perhaps to secure the best results, should be stratified as follows:

"To stratify seeds, they should be placed in a pit out-of-doors. This pit should be situated on raised ground, so as to insure good drainage, and it is often desirable to provide protection against mice and squirrels by means of wire netting or boards. Cover the bottom with a layer of clean sand, two or three inches deep. On this spread a layer of nuts, then another layer of sand, and so on until all the seeds are stored. The whole should be covered with earth to a depth of four to six inches. A mulch of leaves and hay spread on top, and boards or stones to prevent washing, may be an

<sup>1</sup> Assistant Professor of Forestry, New York State College of Agriculture, Ithaca.

advantage. The freezing that takes place during the winter will not injure the seeds, but will assist in opening the hard shells, thus making germination easier in the spring.

"The best kind of soil for germinating seeds is a rich, sandy loam, which will hold the moisture fairly well and yet not be so damp as to cause mildew or molding of the seeds. Ordinarily a sandy loam soil into which has been introduced, and thoroughly mixed, some well decayed leaf mold, such as is found in the woods, makes a very good seed bed. If the pots are kept in the schoolhouse, they should be placed in a south window where they will get plenty of light, and doubtless the temperature of the room, together with the sunlight, will be enough to secure germination. It will sometimes help the germination of seeds to cover the soil with a light covering of leaves or straw, in order to conserve the moisture and heat in the upper layers of the soil. This covering may be removed as soon as the seeds germinate and the seedling breaks through the surface of the ground.

"With the exception of the soft maple and the elm, the seeds of the other trees may be collected in the fall, between September 15 and October 15. The children will have to watch the trees in order to obtain the seed before it is scattered and distributed by the wind."

Make special study of the evergreens in the primary grades. The teacher can get ready for this work at any time of the year. First collect specimens of every kind of evergreen that grows in the neighborhood. Secure the help of the older boys and girls for this. They are always ready to help the teacher. The little children will help with much enthusiasm, for are not the evergreens used for Christmas trees? Are not the boys and girls on the lookout for one for a Christmas tree for the birds?

As each specimen is collected, the teacher should endeavor to identify it either by consulting a tree book or by sending the specimen to a teacher of botany in high school or college.

Fruit trees will provide a number of valuable lessons for primary grades. Any young owner of a fruit tree is being



A CHRISTMAS TREE FOR BIRDS AND ANIMALS



educated through its development, and encouragement to grow one should be given. An apple tree affords a great deal of material that teachers and children will find interesting—the fruit in autumn, the blossoms in spring time, and the animal life in and about it. Boys and girls like apple tree blossoms, leaves and fruit. Robins find here a good place for a nest. Learn the different kinds of apple trees to be found in the neighborhood. Discuss the favorite one and why it is the favorite. Does any one in the third grade know what we would have to do to produce apple trees similar to it?

The young children will be interested in the story of Johnny Appleseed. This story is old, but ever new to the children, and the lesson it teaches is permanent.

There are some good memory selections that will help the children to a new interest in apples and apple trees, among which should be considered the following extract from a poem by L. H. Bailey:

For I planted these orchard trees myself  
 On hillside slopes that belong to me;  
 Where visions are wide and winds are free  
 That all the round year might come to my shelf,

And there on my shelves the white winter through  
 Pippin and Pearmain, Rambo, and Spy,  
 Greening and Swaar and Spitzenburghs lie  
 With memories tense of sun and dew.

They bring the great fields and the fence-rows here,  
 The ground-bird's nest and the cow-bell's stroke,  
 The tent-worm's web and the night-fire's smoke,  
 And smell of the smartweed through all the year.

**20. Weeds.** It is most important that even young children should take an interest in the plants that have relation to agriculture. Weeds are quite as interesting for study as other plants. They can be found everywhere. They produce many seeds which are distributed over the country in most interesting ways. The seeds can be planted in flower pots in the schoolroom. The children can be taught to find

weed seeds among the seeds of grains and grasses that farm-plant. The boys and girls should learn why it is important to keep gardens, fields, and highways free from weeds. This subject can be connected with civic interest and has relation to neighborhood co-operation.

In preparation for her work, a teacher should have knowledge of at least ten common weeds and try to know each one if it appears in the locality. It is not easy to obtain material on weeds, and therefore the following information prepared by Paul J. White, agronomist, is given:

"DAISY. Everybody knows the wild daisy, with its blossom of white ray flowers and yellow center. It is an attractive plant, but very weedy in character. It is most common in old meadows and pastures. It is also common along roadsides, but seldom appears in cultivated fields.

"The daisy lives several years. The plant increases in size by short runners or offsets. It also produces numerous seeds. These often are found in grass and clover seeds, and are sown by the farmer.

"In meadows the only economical way to get rid of daisies is to plow up the field and plant a cultivated crop. They may be partially crowded out of pastures by inducing a better growth of grasses and clovers.

"WILD MUSTARD. This is often called charlock. It is a weed of wide distribution. Its length of life is one season. The plant grows from one to three feet high, and has bright green leaves which are covered with many hairs. The flowers are bright yellow. The stem has a purple spot where it branches. The seeds are small and dark brown, or sometimes reddish black in color. They have been known to grow after lying in the ground for more than twenty years.

"Mustard, when young, is easily killed by cultivation. It should never be permitted to produce seeds on the farm. Mustard often grows in crops which can not be cultivated, such as oats. In fields of small grains it is destroyed by spraying with copper sulphate or iron sulphate, while the plants are but two or three inches high. Ten pounds of

copper sulphate or one hundred pounds of iron sulphate are dissolved in fifty gallons of water, and are sufficient to cover one acre. This spray does not injure the grain crop.

"CANADA THISTLE. Perhaps no weed in the northern latitudes has given more trouble than this one. It may be distinguished from other thistles by the character of the parts below ground. Six or eight inches below the surface, root stocks are sent off which produce new plants in abundance. The Canada thistle produces many seeds which are common in grass and clover seeds.

"This thistle occurs in pastures, meadows, and in cultivated fields. When sod land in which the weed occurs is plowed, the furrow usually does not go deep enough to turn up the roots. Consequently they continue to grow in the cultivated crops and even after the land is again seeded to grass. The most practical method of control consists in very thorough cultivation. No thistles should be allowed to appear above ground. A plant can not live unless it can produce leaves and stems, as the green parts above ground manufacture food which supports the plant.

"ORANGE HAWKWLEED. Large areas of the northern country are entirely overrun with this pernicious weed. It is especially common in old pasture lands. It may be known by its orange-colored flowers and by its creeping habit. The leaves all start from near the ground and are covered with fine hairs. The plant lives from year to year, producing many new plants by means of runners, in a manner similar to that of the strawberry.

"Good farming methods generally succeed in exterminating this weed. If the plants are plentiful, the land must be plowed and reseeded after growing one or two cultivated crops. Where the plants are found only here and there a sharp hoe may be used to cut them off just beneath the surface. Salt is sometimes employed to destroy these weeds. Twenty pounds per square rod should be used. It is applied broadcast while the dew is on. This amount of salt will not injure grasses.

"WILD MORNING-GLORY OR BINDWEED. There is probably no more dangerous weed than this one. It is widely distributed, although not plentiful in most sections. The plant has a twining habit, like the garden morning-glory. The blossoms resemble those of its cultivated relative. They are pink, and about one and one-half inches across. This weed spreads rapidly by means of underground stems. Very small pieces will grow if carried from place to place. They are often scattered by means of farm tools, such as cultivators, which run through a patch of the plants.

"The only practical method of controlling bindweed consists in thorough cultivation. The use of salt or other chemicals is of no avail. The land must be carefully plowed and some hoed crop planted. The weeds must not be permitted to appear above ground. Frequent tillage with a broad-shared cultivator will prevent any growth.

"DANDELION. The dandelion has qualities which enable it to perpetuate itself. The main part of the plant grows very close to the ground, so that even the lawn mower does not damage it. At certain times in the season the blossoms themselves are so close to the surface that the machine passes over them without damage. Before the lawn is clipped again seeds have matured and have flown away to find a new home in a neighboring lawn. The plant lives many years, if not disturbed.

"Dandelions are generally troublesome in the eastern states in lawns only. In the far west they are one of the worst weeds in irrigated meadows. They can not be killed by spraying. They must be killed with a spud or other sharp, narrow-bladed tool. They should be cut off three or four inches below the crown. Even with this treatment they will often send up new shoots. Well rotted manure or other fertilizer applied to the lawn or meadow will so encourage the growth of bluegrass that the dandelion will not appear so conspicuously.

"WILD CARROT. This weed is related to the common carrot, as may be observed from the odor of the roots. Its

white, flat-topped flowers are conspicuous in meadows, especially late in the summer. When the meadow is mown the weed is cut off three or four inches above ground. Several branches are produced where there was but one before. These branches all produce blossoms at the tips. Each blossom matures many seeds, which are distributed in clover and timothy seeds. They have been known to lie dormant in the ground for several years.

"Wild carrot lives but two years. It does not produce seeds the first year. If allowed to mature, the plants break off during the winter and blow across the snow to neighboring farms, scattering seeds as they go. Where very plentiful, the field should be broken up and a cultivated crop grown. The young plants are easily killed. If there are only a few in the field, they should be pulled by hand.

"LAMB'S-QUARTERS. This weed is found everywhere. It is especially troublesome in cultivated fields and gardens. It has no showy flowers. The blossoms are small and green. The seeds are very small and are common in farm seeds. The leaves and young stems of the plant are covered with peculiar white mealy particles.

"It is easy to rid a field of lamb's-quarters if thorough cultivation is practiced while the plants are young. Harrowing small grains or shallow cultivation of hoed crops, such as corn or potatoes, will destroy countless numbers. In some places the plant is used for feeding pigs. It thus takes the name of pigweed. It is also frequently used for greens.

"SHEEP SORREL Sheep sorrel is widespread, and is increasing very rapidly. Its greatest damage is done in sandy soils. When once well established, it is almost impossible to destroy it. The plant grows about one foot in height. It has small, inconspicuous flowers. The leaves are arrow-shaped, about one inch long. The plant bears many small, triangular-shaped seeds which are one of the most common impurities of clover seed. It also spreads rapidly by creeping stems.

"As sheep sorrel occurs most commonly in wornout pastures and meadows, the best method of control consists in plowing the field. The land should be fertilized and well tilled for two or three years. Sheep sorrel is said to be destroyed by applying lime, but this is a mistake. It will grow as well where lime is present as in an acid soil.

"**QUACK GRASS.** This grass has some value as a hay grass, yet it is a most dangerous weed. Aside from the wild morning-glory, it is perhaps the most difficult weed in this list to control. It is found most commonly in rich meadow land and in gardens. It takes the place of more useful grasses. It spreads rapidly from year to year by means of underground stems. These become fastened to farm tools and are carried from place to place. A very small piece of the root will grow and produce a new plant.

"The best method of controlling quack grass seems to be as follows: It is either pastured until midsummer or a crop of hay is cut. The land is then plowed shallow during the hot weather. At frequent intervals the field is harrowed until freezing weather. The roots are thus exposed to the sun and wind. The next year a hoed crop should be grown. The plants which escaped the severe treatment of the previous year will be killed by cultivation."

**WEEDS FOR SCHOOLROOM STUDY.** In beginning the study of weeds in the lower grades the teacher should have a few of the children bring specimens of plants that they consider weeds. These should be placed on the nature study table until the teacher is ready to use them. Some plants that are not weeds will be brought in by the little folk, but many boys and girls have helped their fathers plant gardens and will know a number of weeds. From the specimens brought into the schoolroom the teacher may give lessons on the few that are most troublesome throughout the country, and in the third grade the boys and girls may be taught the best methods of exterminating them.

**21. Grains and Grasses.** Very young children, particularly in the country districts, will, if properly taught,

become much interested in the grains and grasses that are found on the farm lands, and city teachers can often secure and use material of this kind to advantage. Grains and grasses relate to life, whether in the city or the country. They are strangely and wonderfully made, and are often very beautiful in color. Children who know something of the animal life on the farm will be interested in the grains and the grasses that are used in feeding the stock. Even little folk help in the harvest and know how the crops are used.

Have a simple exhibition of all the grains and grasses to be found in the neighborhood. Test the knowledge of the children as to names, where grown, and what each is used for. Have them keep some seeds and plant them in flower pots. In the third grade have the children give a simple history of wheat from the time it is sown until it is made into bread.

The most interesting field plant is the corn. Consider the structure and color. Note the brace roots, the leaves, the tassel, the silk, the ear. How many kinds of corn can be found in the neighborhood? How are the various kinds used? Who can bring to school the most perfect ear of any one kind of corn?

A charming selection from *Hiawatha* for the children to learn is that which refers to Mondamin, the Indian corn. Consider the educational value there would be for the children who have the opportunity to recite this out in a corn-field.

**22. The Autumn Harvest of Orchard and Garden.** The lessons in plant life connected with the autumn harvest are among the most attractive. Small exhibitions of fruit and vegetables can be organized to advantage, and the material collected in this way can be used for lessons in drawing.

The children can learn the varieties of apples grown in their locality and which are most successful for home use and for market. They can learn to distinguish some of the common varieties of other fruits. They can learn to know the nuts of the countryside and a little encouragement will result in a very good collection.

The pumpkin will serve for many lessons, and late on the afternoon of All Hallowe'en the older children can take part in making jack-o-lanterns and in having the candle lit before school closes. The child touch in connection with the real lessons is well worth the while.

**23. Wild Flowers.** Probably teachers are more familiar with the common wild flowers than with any other form of plant life. It will be well, however, to follow the personal notebook idea in regard to this subject, as well as in the work with trees and weeds. Each year there will be increased knowledge of the wild flora of the neighborhood, and the children never tire of this subject. In the schoolroom lessons, there will often be opportunity for teaching the boys and girls to be careful not to exterminate the wild flowers. In gathering flowers they should be taught that a few with leaves are more attractive than a great mass.

The kinships of plants are very interesting, and children should begin quite young to know that plants are classified into groups based on similar characteristics. The relationships can be brought out incidentally if the teacher has botanical knowledge. If on the nature study table there are plants that are akin, the children might be told in a simple way that some plants quite unlike in general appearance are related to each other. Who would think that the buttercup, anemone, hepatica, columbine, and peony belong to the same family? How carefully wise men must have studied to find this out!

If possible, there should be at least one trip to the woods in the spring time. This is the place to teach respect for wild flowers, the way to gather them, the soils in which they thrive, and the community life of the wood.

#### IV. ANIMAL LIFE

**24. Important to Understand Animals.** The importance of animal study in the lower grades can not be overestimated. Much of the child's development in observation, in sympathy, in tenderness, in power to love and serve, in character, in fact,



depends on this work. Pets are essential factors in child life. If boys and girls are taught responsibility in their relation to their pets, one fundamental essential for life will be established. Many will earn their living with the help of animals, and their success will depend on their understanding and observation of animal potentiality. The subject is full of educational possibilities.

In the lower grades, even in the third grade, let the emphasis in study be based on habits, food, and care. The anatomical study may come later. Almost all children know the facts that are brought out in outlines in many works on elementary nature study, such as observations of the eyes, the ears, feet, length of tail, use of covering, and the like, and they do not have spontaneous interest in these things. What does interest them is the way the animal lives and acts: the organized life of the ants; the apparent cleverness of the spider; the skill of the nest builder; the activity of the hen; the work of the beaver; the audacity of the crow; the faithfulness of the dog; the many uses of a cow; the possibility of companionship in a horse.

The terrarium (page 331) should be the center of the indoor animal study. The cricket cage or other simple device for separating the animals will be valuable. Teach absolute cleanliness and care in connection with the cages. This is vital to success. A few considerations of animal study that have been of interest in the lower grades in many schools are presented in these pages, together with suggestions for interesting boys and girls in them. Teachers may prefer to substitute other forms of animal life instead of those given here.

**25. Facts for Schoolroom Work.** We shall not give in these pages descriptive material that can be found in almost any good work on zoology. If a teacher has not enough interest in the subject to look up important facts regarding the animals, it would probably be as well to let the student alone. In discussing the teaching of the forms of animal life, we shall try to present in brief some ideas that should be in the

teacher's mind in this work and some lines of thought that can not be looked up in a reference book. The most valuable text a teacher can have is one which she will herself prepare. As before suggested, a notebook should be kept in which each year will be gathered information learned first hand from natural objects, to which facts obtained by referring to encyclopedias and the many excellent nature works now in print are added. Such a work will count in the personal growth of the teacher and also make the best foundation for nature study lessons.

**26. Birds.** Thousands of persons even at the present day to whom birds make contribution in income as well as in other ways, have but little appreciation of their service. Others who have learned something of the economic importance of birds still believe that much that is said in their favor is due to the enthusiasm of bird lovers. All who are in doubt along this line should send for information to the government Department of Agriculture. Scientific facts can not be disputed, and from investigations by competent ornithologists all over the country many thinking people believe that no small part of national welfare has to do with its bird life. Wrong teaching of the past must be overcome by right teaching at present. Every one should lend a hand in this work, and the teacher can do most of all.

Merely telling the boys that they must not take birds' eggs or destroy bird life has but little influence. Children at a very early age must be put in sympathy with birds. They must learn the joy of the quest to see a new bird or to hear a new bird song. They must learn the real importance of birds in every community, city and country. The teacher should bear in mind that the truth must be taught. No sentimental attitude should interfere with this. If, in any community, the farmers believe that some birds are doing more harm than good, the children should be encouraged to make an honest investigation.

Bird study with young children should be based on an intimacy with: habits, home making, food and haunts. A fun-

damental fact to teach is that the migration of birds has to do with food, not, as many believe, with the weather. Can nothing be done to make it possible for more of our birds to remain with us in winter?

The teacher should have knowledge of the economic importance of birds. She should have knowledge of some ways in which children can be taught to attract and protect them. She must do her part to overcome the prejudice toward some birds that has influenced boys and girls for generations. The three brief articles following, written by Dr. A. A. Allen<sup>1</sup>, will give both information and suggestion: The first, *Food of Birds*; the second, *Nesting Boxes*, and the third, *The Crow*. The article on the crow should be read to the children. This bird is much abused in all farm communities, yet he has value. The fact that the crow, in the majority of cases, is not so bad as he seems may lead to investigation of other birds that have not a good reputation among farmers:

#### *The Food of Birds*

The various phases of bird study are many and diverting: the mysterious migrations, the bright plumages, the charming songs, the nests and eggs. It is seldom we succeed in tearing ourselves away from these and concentrating our thoughts on the more serious consideration of the bird's place in nature and the economy of bird life. When we do come to a realization of the valuable part the birds play in our own lives, we are inspired to even greater interest to learn all we can about them, to care for them, and to protect them. So immediate are their services, even so near to our purse strings, that we wonder how a true realization of their value could have been so long overlooked. It seems impossible that but a few years ago, a great many of our most beneficial birds were actually considered enemies to our agricultural interests and a bounty was placed on their heads. Such was the price of ignorance. Thousands of valuable

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<sup>1</sup> Assistant Professor of Zoology, Cornell University, Ithaca, N.Y.

birds were killed before the harm that was being done was realized. And then it was too late! Scourges of insects and rodents swept over the country, causing losses of millions of dollars.

Let us consider for a moment the position allowed the bird in this country. Before its discovery and settlement and civilization by the white man, when nature was allowed to take her own course and settle her own difficulties, insect plagues of any kind were probably of very rare occurrence. The insects which to-day in countless hordes annually damage the crops to the extent of millions of dollars were kept down to normal numbers by their natural enemies, chief among which were the birds. If at any place there was an undue increase of insects, it meant to the birds more food easily secured and they flocked to the spot; and soon the insects disappeared. There always existed this "balance of nature." An increase in the abundance of any plant meant an increase in the number of insects feeding upon that plant, and a corresponding increase in the birds feeding upon these insects. Were we to follow it still further, we should find also an increase in the number of hawks and predaceous animals feeding upon the birds; for in every locality every species of animal, if undisturbed, tends to increase to the limit of its food supply.

Then the white man came to this country, cutting down the forests, planting grain, introducing new plants, and disturbing the balance of nature generally. Large fields of corn and wheat meant increased food supply for locusts, wireworms, cutworms, and the like, which formerly, between death by the birds and starvation, had been living a precarious existence. Naturally there followed a great increase in their numbers. Discovering this, the birds soon flocked to these fields where they found such an abundance of insect food. The settlers, ignorant of the habits of these birds and thinking they had come solely to feed upon the grain, did their utmost to kill them off and frighten them away. Without the birds to check them, such an increase of these pests

occurred that in places the settlers were forced for a time almost to give up the cultivation of grain. Forbush says: "In 1749, after a great destruction among the crows and blackbirds for a reward of threepence per dozen, the Northern states experienced a complete loss of their grass and grain crops. The colonists were obliged to import hay from England to feed their cattle." Again, "The greatest losses from the ravages of the Rocky Mountain locust were coincident with or followed soon after the destruction by the people of countless thousands of blackbirds, prairie chickens, quail, upland plover, curlew, and other birds." Similar ravages by insects following the destruction of birds have been noticed all over the world for centuries.

When the balance of nature has once been disturbed, it is always difficult to restore it. Since our agricultural progress means increased and increasing food supply for the insect pests, we must expect a corresponding increase in their number, and if we would harvest all of the yield we must provide a means for keeping them in check. Natural means have seemed insufficient; so we have invented artificial methods for their destruction. We poison our seed, we spray poison on the leaves and branches, we fumigate whole orchards, we even gather the insects by hand, spending millions and millions of dollars annually and yet without avail. Locusts destroy our wheat, wireworms destroy our corn, caterpillars destroy our trees and rob us of our fruit in spite of all we can do; yet in all this work of protection, we tend to overlook our most valuable allies, the birds. So quietly their work goes on, that many people live and die without appreciating anything but their beautiful feathers. True, at times, so striking has been the protection given by the birds that even the dullest could not overlook it. In 1848, after the first year's crops had been entirely destroyed in Utah by the myriads of crickets which came down from the mountains, and the second year's crops were rapidly disappearing, the settlers were saved from actual starvation by the thousands of gulls that descended upon the fields and

devoured the crickets. It was looked upon as a heaven-sent miracle; as a matter of fact, many such instances could be cited. It was but the same process which is going on about us every day of the year and which we do not realize until for some reason it is checked and we are overwhelmed with insects.

Nor is it from insects alone that our crops have suffered and again been protected by the birds. Among new plants introduced into this country, some were brought in through either mistake or ignorance, that soon got beyond the control of the colonists. Finding conditions here so much more favorable to their growth than in the old country, they spread rapidly, soon became obnoxious, and to-day are known as weeds. But rapidly as these have spread and become a menace to our agriculture, it is not a circumstance to what would have happened or still would happen were we to drive away the birds. Think of the hundreds or even thousands of seeds produced by each plant. What would happen if all were to grow and reproduce themselves? But as long as we have the birds we need feel little danger. All our sparrows together with many other birds are primarily seed eaters, and many live almost altogether on the seeds of weeds. From the stomach of a single bob-white Dr. Judd took five thousand seeds of pigeon grass. If this represented a single meal of one bird, we can readily understand why our weeds are no worse than they are.

The hawks and owls have perhaps been persecuted most of any of our native birds because of their occasional visits to the poultry yard; yet were it not for these birds we should be so overrun with mice and other small mammals that life would be unendurable. History is full of accounts of mouse plagues which have finally been conquered by large flights of owls. In certain parts of New England to-day, in large part owing to the scarcity of hawks and owls, field mice have become so abundant that young fruit trees can not be grown unless protected from them by artificial means. In sections of the West, partly because of the destruction of hawks and

owls, jack rabbits and gophers have become so abundant that organized efforts have to be made to destroy them. In Pennsylvania some years ago the thousands of dollars paid for bounties on the heads of hawks and owls was but a trifle as compared to the cost of the ravages of the rodents following their destruction. It is only in comparatively recent years that we have come to realize that birds are our friends. True, in our introduction of poultry, we have greatly increased the available food supply of certain of the birds of prey, and it is natural that they should take advantage of it. The toll they levy upon our poultry yards, however, is but little compared with their value in keeping down the number of weasels and small rodents.

Laying aside then all aesthetic reasons, which in themselves are sufficient, we ought to protect all of our birds, not only for their indirect but for their immediate influence on our personal welfare. This is true not only for the farmers, but also for those living in the villages and cities. Wherever there are trees or gardens to be protected from insects and weeds, the birds are our best friends. Books have been written, filled with certified instances of birds having prevented invasions of aphids, caterpillars, potato beetles, cut-worms, white grubs, and pests innumerable.

But enough has been said to convince us of the actual value of the birds. Now what are we to do? What is the legacy which previous generations have left us? In the first place, we must counteract what has been done in past years in frightening away the birds. We must call them back to haunts from which they have long since been driven and do what we can to overcome the fear which has been instilled into them. It is true that wild birds respond to kindness, and where dangers have been removed some of the most timid have been found to become as tame as domestic fowls. When their sense of fear has been allayed, they will flock to our habitations to destroy insect invasions even as they now flock to similar invasions in the wilds. But it means a long, hard fight to overcome the dreadful work of so many

years. The coming generations must be educated to the knowledge that birds have a better use than as targets for sling-shot and gun, that they are more valuable than meat in the pot-pie or decoration for women's hats; that especially about our homes should they be encouraged and protected; that a bit of suet in the tree or some seeds on the snow may mean a troupe of watchful little guards about our orchard all winter; that the removal of a few stray cats and the proper care of our pets is our just duty; that a few bird houses about the house and garden for bluebirds and wrens will do more to keep down the insects than many a gardener; that wood lots and thickets about the farm are as necessary as high fences; that bushes and trees about the house and garden for the protection of the birds are as necessary as laws; that the planting of wild fruit for the birds will save our cultivated trees. These and many other things must be taught to the coming generation.

*Suggestions.* 1. In the study of birds in the schoolroom, special emphasis should be laid upon their practical, everyday value to the farmer, fruit grower, nurseryman, and to people in general. Children should be encouraged to watch birds feeding, both caged and in the wild state. If at any time one is fortunate enough to have a young crow or other bird in the schoolroom, accurate observations should be encouraged as to the exact amount and nature of the food eaten. Such observations on a young robin have shown that it occasionally eats one and five-sixths its own weight of food in a single day. It averaged 50 to 70 cutworms and earthworms a day and one day consumed 165 cutworms. Even when full grown it required one-third of its weight of beef each day. Similar observations on a young crow showed that it required food equal to one-half its weight daily. One day when it was fed two ounces of tomato, 56 grasshoppers, 12 crickets, and a little grain, it lost 10 per cent. in weight. From this, it can be understood how destructive to an invasion of grasshoppers a flock of crows would be, if they gorged themselves.



2. Children should be encouraged to watch birds feeding out of doors with the interest to discover the nature of their food. Oftentimes a robin will nest in a convenient place where one can watch the number of times the parents bring food and very often determine the exact nature of the food. If birds are seen feeding upon seeds, an attempt should be made to determine whether they are the seeds of obnoxious weeds.

3. Bird houses constructed by the children should be placed on the schoolhouse or about the grounds, where the feeding of the young can be watched. See, also, Volume Five, pages 34-36.

4. The planting of mulberry, mountain ash, virginia creeper, or wild fruit trees about the school grounds should be advised in order to attract the birds.

5. Children should be encouraged to feed the birds in winter by fastening suet in the trees and scattering seed in a definite place on the snow. A birds' "Christmas tree" and feeding shelf should be established near a window or where it can be observed from a window. This will be most satisfactory if there is a tree close at hand by which the birds can approach. The shelf should be erected in a convenient place and some sort of branch or small tree fastened to it. A pile of brush near by for shelter would also avail much. Suet should be tied to the branch and seeds sprinkled on the shelf. It will not be long before there are frequent visitors.

6. The boys should always be encouraged to lay aside the sling-shot and gun and take up the use of notebooks and field glass.

7. Children should be taught the necessity for the proper care of cats, for stray or ill-fed cats are the greatest enemies our birds have to fear. John Burroughs says that cats probably destroy more birds than all other animals combined. It has been estimated that in Massachusetts alone, a minimum of seven hundred thousand birds are killed annually by cats.

*Nesting Boxes*

There are many ways of attracting birds to the home or to the schoolhouse, some of which have already been presented to you. We may hang suet in the trees and scatter seeds to attract the winter birds; we may provide food for our summer visitors in case of want and establish drinking fountains and washbasins. But one of the most successful and interesting means at our disposal for attracting the birds is that of building nesting boxes.

Perhaps we have been feeding the winter birds with such success that the chickadees and nuthatches and woodpeckers have ever been with us and we wish to keep some of them all through the spring and summer, or perhaps we wish to attract other summer birds as they come back to us in the spring. The cheery bluebirds, the industrious wrens, and the graceful tree swallows may be invited to remain about our dwellings by the proper placing of nesting boxes, and if they chance to select our proffered box for their chosen home we may feel well repaid; not only by the beauty and interest that they will bring into our lives, but because in feeding their hungry young they will protect our trees and gardens against the ravages of insects. Having decided to put up one or more nesting boxes, the question naturally arises, what kind of a box to get and where to place it. The object of this article is to put such information at your disposal in the simplest form.

In the first place, many birds that can be attracted in no other way will be attracted by the planting of trees and bushes. We must not expect them to come to our boxes. Other birds will nest about our buildings, if they are given any encouragement in the way of a protected shelf on which to place their nests. These are the robins, phoebes, barn swallows, and cave swallows. The modern barn, with its vermin-proof walls and smooth rafters, provides neither entrance for the swallows nor places for them to attach their nests. The painted boards beneath the eaves are too slippery for the gourd-shaped nests of the cave swallows. The man

who builds a barn little realizes that he is driving away one of the chief protectors of his crops. He should make haste to cut an opening beneath the gable and to nail cleats to the rafters and beneath the eaves, that he may once more avail himself of the services of the swallows. Similarly, cleats or shelves placed about the porch, above the pillars, or in other sheltered corners will provide nesting places for the robins and phoebes and will encourage them to remain with us. These shelves should be placed less than a foot apart beneath some projecting roof or other shelter.

The buildings of our forefathers were full of nooks and crannies where wrens and bluebirds liked to nest; the orchards were not so scrupulously pruned, and woodpeckers found plenty of dead limbs in which to drill their holes. To-day we must provide artificial nesting sites to take the place of these natural ones, if we wish to have the birds about us as they used to be.

Some birds, notably wrens and bluebirds, will avail themselves of anything in the way of a shelter which you see fit to put up; while others, such as woodpeckers and nuthatches, are more particular and require something more natural in the form of a hollow limb. The chief difficulty will not be in the construction of the boxes or in attracting the birds, but in keeping out the English sparrows. These interlopers are ever present and ready to begin building as soon as the box is in place. Needless to say, you do not wish these rascals, but prefer our native birds. There is no sure way of keeping them out except by hanging the box on wires so that it swings freely in the wind. The objection to this box is that it proves less inviting to our native birds, and so should be attempted only as a last resort. One meets with greatest success with boxes placed on exposed holes or in trees, with the opening no larger than is necessary for our native birds: one and a half inch for swallows and bluebirds, smaller for wrens and chickadees.

*The Box.* No money need be expended on this. Old, weather-beaten timber is more attractive to the birds than

smooth, painted boards. The best boxes will be made from sections of a hollow limb, covered above and below by weathered boards with a hole drilled near the top of one side. Artificial limbs can be made from bark or by hollowing out solid branches with the bark still attached. Old boxes, or new ones made for the purpose, are next best. For the smaller birds, such as chickadees, wrens, bluebirds, and tree swallows, the boxes should measure not more than 12x5x6 inches, and they may be considerably smaller to advantage. The ordinary crayon box of the schoolroom is very serviceable, but requires reinforcing with wire or nails so as to withstand the weather. Cigar boxes and codfish boxes are generally less satisfactory than odorless ones, and all bright surfaces should be avoided. A box with the top or one side hinged is better for observation, but care should be used to keep it permanently fastened.

Old teakettles, tin funnels, and cans of various sorts have been used by some persons with success, but the box is more sightly and usually more attractive to the birds. The opening should be made circular or square, preferably the former, and toward the top of one side. It should be not larger than the dimensions given above.

If one is not bothered with sparrows, a perch should be provided beneath the opening; but inasmuch as sparrows do not take so readily to boxes without perches as do other birds, it can be removed if necessary. A perch should be placed in the near vicinity, however, on which the birds may alight before proceeding to the nest.

A layer of sawdust may be placed in the bottom of the box, but the use of other nesting material is to be avoided. For chickadees and swallows, however, cotton or feathers scattered near may prove attractive if there is no poultry to furnish a supply.

*Placing the Box.* Inasmuch as the birds prefer weather-worn materials to bright surfaces, it is well to have the box in position by early spring and thereafter left from year to year. In placing it, three things should be borne in mind:

attractiveness to the birds, comfort, and protection. For the swallows that prefer the open, the box should be raised on a slender pole several feet above the fence, clothes pole, or outhouse to which it is attached. The pole should be strong enough to prevent it from swaying in the breeze, and yet sufficiently slender to protect against marauding cats. Sometimes, if squirrels are abundant, it is necessary to place a metal shield about the pole in order to prevent them from climbing to the nest for the eggs or the young. The pole should be near a building, dead tree, telephone wires, or other natural perch. Wrens and bluebirds also may frequent this box, but they prefer to have a tree in the immediate vicinity. Boxes placed seven to twenty feet up in a tree generally prove more attractive to the latter birds, as well as to the chickadees and nuthatches; but care should be used to guard the tree from cats by shield of metal or wire netting. As exposed a position as possible should be chosen for the site, yet one which is more or less shaded from the sun during the heat of the day. It is better to have the box face toward the south.

Frequently, boxes placed on the house or the school building, below or beside an upper window, prove attractive to wrens, swallows, or bluebirds and are then near enough for observation. These boxes, however, are frequently overrun with English sparrows, and are unsuccessful for that reason.

The best results with bird boxes are always obtained by studying the habits of the birds of the neighborhood that nest in holes, and by reproducing such conditions as nearly as possible.

#### *The Crow*

The crow came in with civilization. Although practically unknown while the country was covered with dense woods, he has now become one of our most abundant and best known birds. Sociable in his nature, omnivorous in his feeding habits, sagacious in his actions, he is eminently fitted to replace the solitary raven which left us with the forests.

In no place is he more at home than in the farming districts. Here he finds the open country in which to feed, as well as timber sufficient to shelter his nest. He usually escapes his few enemies. It is seldom he falls a victim to a hungry hawk or starving owl and he avoids even more successfully the man with a gun.



IN SOME PLACES  
HELPFUL

The crow is generally considered a thief and a scoundrel and his better side overlooked entirely. He robs the nests of smaller birds, devours a great deal of grain, and in his zeal for hunting cutworms and grubs uproots enough young corn to blacken his name with any farmer. Seldom is his aid in destroying insect pests and vermin appreciated, although these, if allowed to go unchecked, would do much more damage in many places than the crow himself!

The chief fault of a crow lies in the fact that he is lazy. An omnivorous feeder, he takes whatever comes most easily; locusts, cutworms, white grubs, mice, frogs, fish, young birds or grain. Whatever is most abundant and most easily secured forms his diet. In this way he becomes of great assistance in checking the larger of our insect foes, for any excessive increase in their numbers means to him simply "easy food," and he feeds entirely upon them until their numbers are reduced and something else is more easily obtained. It is only when other food is scarce that he does much damage to grain or young birds. Therefore, if we can protect our grain without destroying the crow, we shall be doing a service both to mankind and to nature.

"My friend and neighbor through the year,  
Self-appointed overseer

Of my crops of fruit and grain,  
Of my woods and arrowed plain,

Claim thy tithings right and left,  
I shall never call it theft."

—JOHN BURROUGHS.

HOW TO TEACH BIRDS TO PRIMARY CHILDREN. Everything in relation to the teaching of birds must be done with spirit. Little children will never get education from a robin by following an outline. They must follow the robin himself and each year deepen their love of him, their need of him, and their knowledge of his interesting life and ways. Before the teacher can help the children in the best way, something of the following must be in her mind and heart:

### THE ROBIN

BY L. H. BAILEY

"The drifts along the fences are settling. The brooks are brimming full. The open fields are bare. A warm knoll here and there is tinged with green. A smell of earth is in the air. A shadow darts through the apple tree; it is the robin!

"Robin! You and I were lovers when yet my years were few. We roamed the fields and hills together. We explored the brook that ran up into the great dark woods and away over the edge of the world. We knew the old squirrel who lived in the maple tree. We heard the first frog peep. We knew the minnows that lay under the mossy log. We knew how the cowslips bloomed in the lushy swale. We heard the first roll of thunder in the liquid April sky.

"Robin! The fields are yonder! You are my better self. I care not for the birds of paradise; for whether here or there, I shall listen for your carol in the apple tree."

BIRDS THAT TELL THEIR NAMES. Children in primary grades will become very much interested in the birds that tell their names: the chickadee, the phoebe, the pewee, the whip-poor-will, the bob-white, the bobolink, and others; and also in the birds that speak in a way that identifies them, such as the owl and the catbird. If in preparing to discuss these birds with the children the teacher will have a few facts regarding them, as to size, color, and the like, the children will be on the lookout for them. Following is a suggestive list:



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Chickadee	Owl
Woodpecker	Whip-poor-will
Meadow Lark	Bob-white
Song Sparrow	Crow
Catbird	Phoebe

**STUDY OF THE HEN.** All young children should be interested in the robin, bluebird, and English sparrow. They should also know quite intimately the birds in the poultry yard. The structural feature of birds need not be discussed to any great extent in the lower grades. Some study along this line, however, may be valuable, and a hen will be useful for this purpose. This will lead to some fundamental study of poultry, which is always worth while.

Have the children note how the feathers of the hen overlap each other as shingles on a roof. They make a good rain-coat. It is interesting to watch a hen when it showers. She stands so that the water falls off her back. Is there any difference between the feathers on a hen's back and those on her breast? Who has seen a hen oil her feathers? She has a little oil sack near the base of the tail for the supply of oil.

In studying feathers, the children will take an interest in noting that birds have feathers for use and feathers for ornament; that the mother birds are not so gayly clothed as are the father birds; and that this is a wise provision, because the mothers take care of the nests and in plain dress are not so readily seen by enemies. They will notice how ornamental is a rooster's tail and the coloring of his neck, the attractive coloring of a drake's head and wings, the tail of the turkey and the peacock. Attention may be called to the ornamental features of combs and wattles of poultry.

In noting some of the simple structural features of the hen, the children will themselves think about the location of the hen's eye. She looks at us first with one eye and then with the other. They will also be able to compare her beak with the beak of a duck; and find the difference between the feet of the hen, a scratcher, and the feet of the duck, a wader. They

will notice the scales on the feet of the hen; they will have seen scales, perhaps, on fishes, on a little snake, if one is brought into the school, and on the turtle.

The way a bird flies can be discussed; how pushing the air down with the wings enables them to fly and how the tail is used as a rudder. The children should consider whether the domestic birds need to fly in getting food and for protection as much as the wild birds do. Such simple observations are full of interest and educational value when studied in connection with a real bird.

It will be very easy in almost any community to have not only a live hen and a live duck in the schoolroom during the term, but also a pigeon and a canary. The children will grow very much attached to the pigeon, and it will become a real part of their lives. They will also derive profit and pleasure from a canary. Although to a lover of nature a canary does not give much joy, it can be used to advantage in the study of birds and is a form of bird life that the teacher in the city can borrow for a few lessons.

Occasionally a pet crow can be brought to school as a visitor. He will always be welcome, and if somewhat noisy, the children will do their part in concentration on other work for the sake of having the crow in the schoolroom.

NOTE. One of the most valuable lessons in connection with bird study is to teach the boys that many bird songs are whistles which they can learn to imitate. Some ornithologists have made a study of bird notes and a few can imitate them; in fact, this is sometimes done most skillfully. The listener can close his eyes and imagine himself in a wood still wintry in which can be heard the phoebe call of the chickadee; or he can recall the afternoon of a summer day out along a wooded stream that is gladdened by the mystic song of the veery; or again feel himself in the night wood through which the little screech owl sends his strange, weird cry.

**27. Fishes.** Many persons never realize the wonder of the fishes in our lakes and streams. They, perhaps, have

caught fishes and eaten them but have not known much of the beauty of form and color nor how remarkable is the adaptation of their structure to the water world.

Every child should have an opportunity to watch a fish and he should be directed in simple ways in his observations of it. A battery jar or any large glass vessel will provide a place for this. If one fish at a time is studied, it is not difficult to keep it comfortable. If the fish loses vitality, the children should be instructed to take it back to the pond or stream from which it came.

The fish for study should be taken from the water in a net and not handled. The water in which it is kept in the schoolroom should be changed when needed and occasionally aerated. The jar should not be left in the sun. A very small amount of fish food should be given every other day. If the teacher understands how to make and keep a balanced aquarium, it will, of course, provide better study than to have one fish in clear water. Consult the chapter on aquaria in *Nature Study and Life*, by Professor Hodge.

In case the school is not near any pond or stream, a gold fish will give children the opportunity of watching a fish and of trying to understand what they see. If waterways are near, Johnny darters, minnows, sunfish, sticklebacks, or other small fishes can probably be secured. A bullhead is hardy and although his way of life is to seek the muddy places, one lived for many weeks in clear water in an aquarium jar in a schoolroom. He was a joy to the children and although he was a much-prized pet, the class finally voted to take him back to his natural haunts. The leave-taking of Billy, the bullhead, was very interesting.

In the observation of fishes by young children it would be well to direct their attention to the following:

- (a) The shape of the fish, which enables it to go through the water.
- (b) The location of the fins.
- (c) What part of the fish is used as propeller?
- (d) How does a fish steer itself?

(e) Has it eyelids?

(f) Do all fishes have scales? What about a bullhead?

(g) Watch how a fish breathes. See him open his mouth, take in the water, force it over the gills and out through the gill openings. A fish must get the air from water.

(h) Some fishes make nests. Has any boy or girl ever seen the nest of a sunfish ("pumpkin seed") with a father fish guarding it? The nests are merely depressions on the bottom of the stream. Many persons have seen this.

### 28. Amphibians. (TOADS, FROGS, SALAMANDERS, ETC.)

A fairly well organized grouping of animals will be unconsciously learned by the children if the teachers in preparing the lessons have this in mind; not that there is any objection to presenting the groups directly if the teacher is interested in doing this, nor in giving scientific names to young children if circumstances make it possible and desirable, but such teaching is not essential. In the study of amphibians the teacher will be able to connect observation on the animals of this group: toads, frogs, salamanders and other forms. The most satisfactory of the amphibians for the children to study in the schoolroom are the toads and salamanders. Let no teacher lose the opportunity to educate by means of these animals. A primary teacher, one who has prepared girls and boys for real womanhood and real manhood, states that she hesitates to express her belief in the value of these animals in primary education, lest she might be considered over-enthusiastic; but, in truth, her experience is that of many other teachers.

Let us first consider the toad. *Bufo* was discussed in connection with the terrarium, page 331. The children soon learn how valuable he is in our gardens. He is industrious and skillful in his pursuit of insects, and his ability to remain motionless the while he looks like a clod of earth is an advantage to him in earning his living. Have the children ever found one in summer enjoying the shade of a burdock or other large-leaved plant? He seems to use such a retreat as if it were a park—quiet, cool, and shady. Toads are very valu-

able on farms and in gardens, and boys and girls can help to take care of them. The snakes and some of the birds are their enemies, and they are not so well protected from them as are the turtles. Why?

The changes of the toad from the egg to the adult can be observed in the schoolroom. This should not be attempted, however, unless the teacher is ready to give some time and attention to the matter and to study carefully some method of doing this such as is given in *Nature Study and Life*, in the chapter beginning on page 274. If the teacher is not ready to do this work completely, she can without much effort have some stages of the development of a toad demonstrated in the schoolroom. The children can be taught how the eggs look—a long string of small black eggs in a jellylike substance. These can be taken out of a pond in May or June by means of a scoop net. They should be placed in a glass jar of water until they hatch and then should be returned to the pond if preparation for their care has not been made. This experience will give the children knowledge of three stages of toad life. The wise teacher, will, however, follow directions given by Professor Hodge for the study of the life history of a toad, through which the children will make some remarkable observations and receive much development.

The study of the toad for little children may be directed by questions similar to the following:

(a) When the toad's eggs were found in the water, were they attached to anything?

(b) How does a tadpole swim?

(c) Watch a tadpole when the front legs begin to grow.

(d) Is the toad's tongue attached to the front or back of the mouth? Note how quickly it can be used when an insect appears.

(e) Does a toad change color in different surroundings?

(f) What enemies has a toad?

The salamanders are even more interesting than the toads. Children grow attached to them on short acquaint-

tance, and many college students have found them very companionable pets. The children will often call a salamander a lizard. This will give the teacher an opportunity to tell them that the lizards belong with the snakes and turtles—that they have scales which the salamanders have not, and differ in other ways. Some teachers will have an opportunity to teach first hand the differences between lizards and salamanders.

If teachers have never seen a salamander, ask the children to look under stones or along the brook sides for a little creature that looks something like a lizard but has no scales on its body. They may bring the spotted salamander, black with orange spots, or the land form of the spotted newt, red with vermilion spots along the sides; or in scooping things out of the pond they may find the water form of the spotted newt. Many children have found the little slimy salamander, a black one with bluish-white specks. Let us consider a few of the species and be ready to recognize them if they come our way:

(a) **THE SPOTTED NEWT.** This salamander deceived many naturalists for a long time. They were well acquainted, as they supposed, with two distinct species: the one, greenish in color, with vermilion spots along the sides, which lives among the water-folk; the other, red, having the same arrangement of scarlet spots, that lives on land. It was finally discovered that they are one and the same, appearing in different colors as they change their dwelling place.

The spotted newt leads a strange life its history being divided into three periods after it is hatched from the egg. First, dressed in green, it lives in the water, matching so well the background of slime and plants that enemies have difficulty in finding it. The next stage is spent on land, where it wears a reddish coat. This is not conspicuous in the woodland and wayside spots which it haunts. The third and last period is aquatic. Clothed once more in green, it again takes up its abode among the water-folk, unchanged in habit and found during the day under boards and stones.

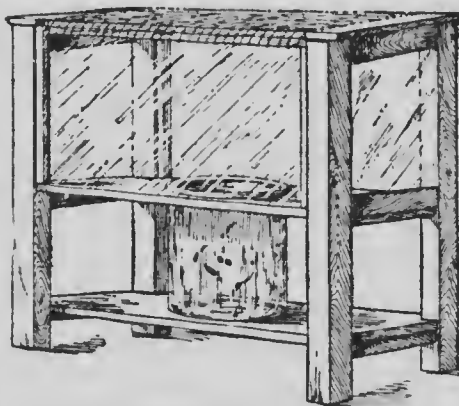
(b) **THE LARGE SPOTTED SALAMANDER.** This species is black, with orange spots on each side of the back. It is found in marshy places.

(c) **RED-BACKED SALAMANDER.** The red-backed salamander is known by the broad reddish band on its back. The body is slender. It is found in woods and on hillsides.

(d) **THE DUSKY SALAMANDER.** This salamander, blackish in appearance, will be found in moist places.

(e) **THE SLIMY SALAMANDER.** This form is black, usually with bluish-white blotches and specks, often found under stones.

In the accompanying illustration is presented an arrangement for indoor quarters for salamanders. The upper part should be enclosed by means of netting so that the salamanders can not escape. Cover the platform with two layers of moss. Between the layers of moss place, from time to time, pieces of wood from a decayed stump. In this wood the salamanders will get food to their liking. It will probably contain insects and their eggs, worms, etc. Salamanders have been taught to eat raw meat by moving it in front of their eyes, but it is better to let them find their food in the decayed wood or have the children gather small worms for them. They will feed on meal worms.



INDOOR QUARTERS FOR SALAMANDERS

If the study of toads and salamanders proves satisfactory, the teacher will enjoy preparing material on frogs and tree frogs.

**29. Reptiles. (SNAKES, TURTLES, ETC.)** Snakes are interesting, and if a teacher has knowledge of them and no decided prejudice against them, it may be satisfactory to have one



in school. The objection to them is often so strong on the part of parents and children that teachers may prefer to substitute other forms of life.

Among the reptiles, the turtle will be found most interesting for study and should not be neglected. Never was wild creature a greater pet than "Solomon," a box turtle used for lessons in a primary grade; unless, perhaps, a class of long ago will take the stand that "Dewey," a painted turtle, was as much a favorite. Turtles are remarkable in structure. They are safe pets and easy to care for. The little children love them and enjoy experimenting in finding food for them. The teacher can help in this by discussing the natural habitat of the turtle visitor and the kinds of food likely to be found there. Solomon, the land turtle, did not eat for many weeks and then partook of a banana as if at last his favorite dish were served.

If we want to keep turtles indoors and make them comfortable, we must imitate the surroundings of their natural home. There should be both land and water areas. Quite as essential to turtle comfort as these is the opportunity for concealment. The clumsy creatures cannot get away from their enemies quickly and must, therefore, be able to hide from them. Some turtles will be comfortable in the terrarium, but good turtle quarters may be made as follows:

Take a good-sized soapbox and cut a hole in the bottom in which a milk pan can be lowered. Under each side of the box place a block of wood as deep as the pan. This arrangement will give opportunity for the land and water conditions; placing a slanting board above the land area, and a handful of duck weed or some other plant in the water, will give the turtles a feeling of safety. Make the cage as neat and attractive as possible. Paint it dark green.

In the study of turtles bear in mind the following:

(a) Is the turtle a land turtle, a water turtle, or a mud turtle?

(b) The box turtle can get completely inside its shell. The snapping turtle is not so well protected. On intimate

acquaintance we find that Nature has given the snapping turtle another means of defense. What is it?

(c) As we come to know turtles out-of-doors we shall see that they are protected by their coloring. The old wood tortoise resembles the dusky way along which it travels. The mud turtle is the color of the mud. The painted turtle, although brightly colored, usually sticks only its striped head, which imitates the plants, above the water. Notice the way in which coloring protects other animal life.

(d) If we are patient, some turtles will become tame enough to eat raw meat from our fingers. They seem to find a bit of bologna sausage irresistible. Do not feel anxious if they refuse food for several weeks or even months.

(e) Turtles bury their eggs in the sand a few inches below the surface, where the heat is most uniform.

(f) What enemies do turtles have?

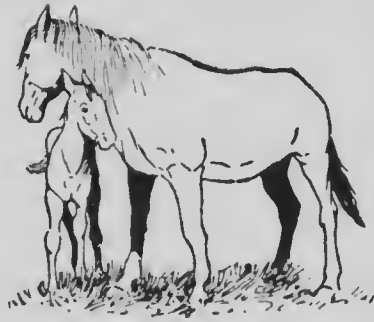
**30. Mammals.** From the very beginning, children should be taught appreciation of animals of economic importance, and such teaching in the lower grades should develop love of these animals and interest in their habits, food and care.

When one stops to realize the part the horse, cow, sheep and other animals have taken in human lives, how the appreciation deepens; we wonder that there has been so much carelessness and cruelty practiced in connection with them. This thought is not born of sentimentality, but fact, and education is needed to bring about better domestic animals and better owners than many in the past have been. Considerations of the suggestions here given will help teachers in the study of animals that children know.

(a) **THE HORSE.** Boys and girls see horses daily. In the country there are the farm horses, the doctor's horse, the postman's horse; in the cities the children see the horse of the butcher and the baker; the horses that drag the heavy coal wagons up the hills; the saddle horses; and the horses trotting along the boulevards. One rarely sees a horse and a small boy any place near each other without noticing interest on the boy's face. The boy is looking at the horse. Can

he be taught to see what he looks at and, perhaps, to reason from what he sees? A few questions such as the following may be occasionally given:

(1) Where is the horse's knee joint? (The knee joint is situated a little over half way down the front leg between the fore arm, which is above, and the canon, which is below.



It corresponds to the wrist of a man.) Which way does he bend his knee? (The knee joint bends backward.)

(2) Can a horse sleep while standing? (A horse can sleep standing, and will do so rather than lie in an uncomfortable place unless there is something the matter with his feet, or he is very tired.)

(3) Ask the boys and girls to notice how the legs are placed when a horse lies down. (When a horse lies down he draws the four feet together under the body, lowers the head, bends his knees, until they touch the ground, and gently falls over on the side, the right or the left. He may now assume one of two positions: first, if on the right side, he rests on the chest and abdomen with all four legs half bent and drawn up towards the abdomen, the head and neck swung to the left and probably resting on the limbs or against the abdomen; second, he may lie flat on his side with head, neck, body, and legs all stretched out on the ground.)

(4) How does a horse get up? (To rise, the horse raises the head and neck, extends the forelegs in front of him and raises himself part way up on them; in the meantime he has placed his hind feet on the ground a little removed from the abdomen; then by a quick effort he brings himself up on his feet.)

When a cow rises, she lowers her head and neck, rests her fore quarters on her knees, raises herself up on her hind feet, then by a quick effort rises to her fore feet.

(5) How does a horse start to walk? (A horse in starting to walk after standing, may start off with either his right or his left foot. In case he starts off with his left foot, almost at the same time he raises his right hind foot. As he walks, a horse moves on diagonal feet.)

A teacher should have knowledge of the breeds of horses.

The draft horse, with short legs; heavy body; short thick, neck; broad, deep, chest and shoulders, strong hocks; moderately large feet. These horses are used for heavy work.

Coach horses, with long, arched necks and fine heads; with rounded and well-proportioned bodies.

Roadsters, trotters and saddle horses are usually smaller than coach horses. Their necks are longer and their chests narrower.

It will be a good thing for the teacher to collect from time to time pictures of draft horses, coach horses, and other breeds, in order to show the children some differences that will help them in their observations of horses in the highways or on the farms. The children will, of course, be interested in the Shetland ponies, and in all ponies, and perhaps some day one of the children may bring his own into the school yard for a lesson. This would be to the little folk the best of all.

A few simple talks with the children as to the care of animals will be valuable in the lower grades. Teach them the ability many persons have had to understand horse language. Teach them how they can learn to know how a horse feels about many things by watching his ears; by understanding his whinny; by simple experiments in acts of kindness and affection. They should know how important are kind treatment, regular food, good care, and proper housing if one wishes to make a horse valuable. They should be taught the importance of having a stall in which a horse need not be tied; of having the stall well lighted; of having the air in it pure and dry; of giving the horse water to drink, and of having salt where he can help himself to it.

Many of the children have seen a trained horse perform. The person who is successful in teaching horses is the man who understands the horse.

The children who have horses at home will be interested in discussing some of the following:

(1) A cold bit should never be put into a horse's mouth. If very cold, it may take the skin off from the tongue.

(2) If horses are in the pasture, they can be taught to come to the owner if he will feed them something at that time that they like.

(3) Horses should be protected from flies.

(4) The harness should fit.

(5) The bit should be easy.

(6) The blinders should be carefully adjusted.

(7) A whip will not need to be used frequently, if it is used wisely and only when absolutely needed.

Some teachers are interested to know the proper food for horses, since this subject may come up in lessons on the horse. In this connection Professor M. W. Harper<sup>1</sup> gives the following:

"The foods given to a horse vary according to the locality. In the Northern States, Indian corn or oats constitute the grain part of the meal, while cornstalks or timothy hay constitute the coarse part of the fodder. In the South Indian corn is the common grain, and dry cornstalks the coarse material. On the Pacific coast, barley is the grain, and wild oats, or the barley and wheat plants, the coarse material. Wheat-bran is also a very good food and should never be dispensed with in feeding the horse, especially the driving horse, which is likely not to be regularly driven. There is nothing better to feed a horse than good sound oats, Indian corn, and wheat-bran for the grain part of the meal; nor is there anything better than good sweet timothy, or mixed timothy and clover hay, free from dust, for the coarse part of the ration.

<sup>1</sup> Assistant Professor of Animal Husbandry, New York State College of Agriculture, Ithaca.

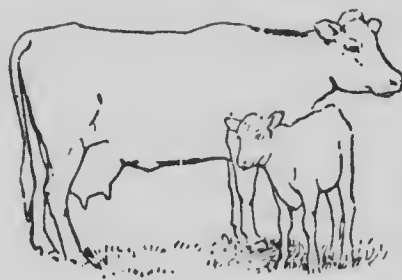
"The number of pounds to be fed per day can not be stated with exactness. That will depend on the kind of food, as well as the size of the horse and the kind of work he is called on to do. We may say that a horse of the average size doing light work will consume 20 pounds of dry matter, water free; one doing medium work, 24 pounds; and one at heavy work, 26 pounds per day of dry matter, of which one-half to two-thirds should be grain, the remainder coarse fodder. The proportion of grain that should be fed depends on the kind of work the animal is doing. When the horse is hard at work, the grain should be increased and the hay diminished; when he is idle, the hay should be increased, and the grain diminished.

"The portion of the day's allowance that should be fed at each meal can be stated with more exactness than the amount. The animal should be fed three times per day, having one-quarter of the day's allowance at least one hour before going to work in the morning. When the morning's task is over, he should be watered, then fed another quarter of his allowance, and watered again on the way to work. When the day's work is done, he should be watered, then fed the remainder of the food, which will be one-half of his day's allowance. The reason for the large meal at night is that he now has ample time to masticate and digest his food. He should be unharnessed at once, and when the sweat has dried, be given a thorough brushing. A horse cared for in this way will come from the stable full of vim and energy and ready to attempt any task he may be called on to do."

*One Plan for Interesting Children in Observing Horses.*  
In teaching the horse, emphasize its importance by making an event of one lesson. Tell the children that in a week or two, a part of Friday afternoon will be spent in talking about horses, and until then everybody will find out all they can about them. This work will, of course, be for the third grade. In the first and second grades some of the simplest ideas presented may be used.

Have as much room as possible on the nature study table for the lesson on the horse and collect things of interest in

relation to it. This is one subject for which some manufactured products will be helpful in giving instruction: Pictures of different kinds of horses for the scrap book; samples of feed neatly arranged on the table. Have the children find out at home what is used to feed horses and then let different children bring samples of the food. If possible, let one of the children take home a French glass bottle and get some



flies that are found annoying the horses. Discuss means of protection from flies.

(b) **THE COW.** Since the cow is one of the most important domestic animals and has relation to the life of every child, the study of a cow and its products should be emphasized. Clear the nature study table as well as possible and have the children prepare for lessons on the cow. In the cities the real nature study lesson which will come from actual observations of the cow can not be worked out, but every child should know about cows and dairy products, and some of the suggestions here given can be made full of interest.

Have scrapbook pictures of the different breeds of cattle. These will be found in many farm periodicals. A good chart can be made from such pictures. Have samples of feed. If possible, borrow a modern milk pail and discuss why it is better than the old kind of pail. Many of the children have baby brothers or sisters; ask them why milk should be clean? Milk is the best kind of food, and the cow gives it to us. Why does a cow deserve the best kind of care? In this connection the teacher can from time to time bring out facts from the following on the care of the cow, made by Professor E. S. Savage.<sup>1</sup>

"All cows deserve better treatment than they receive. They are entitled to the best of treatment, for they give us

<sup>1</sup> Assistant Professor of Animal Husbandry, New York State College of Agriculture, Ithaca.

milk, butter, and cream while they live, and even when they die they give us shoes and robes to keep us warm. Beef, the meat that they yield, is an important article of food.

"A good cow is entitled to six things from her master: (1) Kindness; (2) a clean, dry home; (3) plenty of light; (4) pure air; (5) pure water; and (6) an abundance of salt. Every caretaker of cows should see that these conditions are met, as well as see that his cow has plenty to eat.

"Every animal in a well-managed dairy herd will be so tame that the owner and attendants can catch her easily in the open lot at any time. A dog, be he ever so gentle, is of little use in connection with a dairy herd. A club or a whip should have no place in a dairy barn.

"Light and ventilation explain themselves. We must supply all the light and the pure air possible. It is not costly to provide light in a stable, neither is it very costly to provide efficient means of ventilation in old stables if the owner is a live, hustling manager with his mind open to the best in his power for the comfort of his animals. All the dairy papers and experiment stations are ready at any time to help and suggest means of bettering stable conditions, with plans that may be had for the asking. Most of these plans are simple and economical, and farmers are fully capable of putting them into execution.

"Cows should be watered at least twice a day. The water should be pure, and, if possible, it should be free from ice at all times of the year. If cows have a place to drink where ice does not form, and if they are watered twice a day, it does not seem necessary to warm the water artificially. It is important to avoid chilling the animal; she should not have to stand and shiver after drinking. Any system is a "good watering system" which will furnish pure water and which works so that the cow gets all that she requires at least twice in twenty-four hours.

"A cow should be furnished with about one ounce of salt every day. The practice of our best dairymen varies. The writer would suggest feeding each cow about two ounces



of salt three times a week, either mixing it in the grain feed or merely throwing it into the manger any time during the day.

"If boys and girls in helping their fathers to take care of the cows, will keep in mind the foregoing they will be doing a service for many persons."

For the real nature study of the cow have children make simple observations, whenever possible, as follows:

Do all the cows in the neighborhood look alike? How do they differ? Whose cow gives the most milk? Let us try to find out. Everyone try to see Mr. ——'s cow before Monday and find out what color she is. Find as many colors on the cow as you can and be able to tell where the different colors are. Who has the best stable in the town? Why is it the best?

#### THE COW

ROBERT LOUIS STEVENSON

The friendly cow all red and white,  
I love with all my heart:  
She gives me cream with all her might,  
To eat with apple-tart.

She wanders lowing here and there,  
And yet she cannot stray,  
All in the pleasant open air,  
The pleasant light of day;

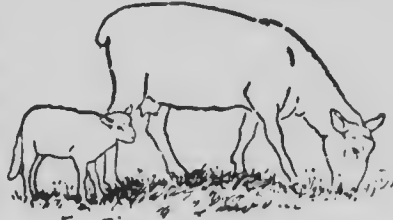
And blown by all the winds that pass  
And wet with all the showers,  
She walks among the meadow grass  
And eats the meadow flowers.

Does she eat daisies and buttercups? Who can find out?

(c) SHEEP. How much of nature and literature and art are connected with sheep and the shepherd? Pastoral remembrances always include the sheep in the pasture, the shepherd, and the faithful dog. Let us deepen the child's interest in such country life pictures.

In some communities a pet lamb can be found. Make the most of this. Learn from the owner some of the habit-

and interesting facts connected with his sheep raising. Many a farmer has a rich store of knowledge which he will share with the teacher if she will seek it. The important lessons on sheep for children in the lower grades will have to do with the habits and care. The uses of wool and practices of shearing will be interesting. Children will develop human interests in hearing the story of "Findlekind," by Ouida. It is a sad story, but young sympathies must be deepened and such literature helps. They should also know Wordsworth's poem, *The Pet Lamb*. No parody on this piece of literature nor any amount of careless familiarity can lessen its merit. Every teacher of little children should read this at twilight in a quiet place and perhaps something of the elevation of spirit that Wordsworth had will follow the reading. Simple, sweet, and deep is the message of the poem.



(d) THE DOG. Perhaps no animal is more loved by young children than a dog, and many a schoolroom has been gladdened for an hour or two by the presence of one that is friendly and well behaved. Before inviting a dog to visit the school, the teacher should learn which one in the neighborhood is the most desirable. The boys and girls will be interested in the way the dog eats and drinks and sleeps; in his quick intelligence; in his love for his master. Very live discussions will take place if a little encouragement be given.

Children should be taught to take responsibility in the care of their dogs. When a boy becomes the master of a dog he must find out how to treat him. He should learn the diet of the dog from some one who has been successful in raising the particular breed considered and should follow directions given. He should learn the kind of shelter to give his dog. He should learn how to train him. He

should study the nature of his dog, for no two have the same dispositions; and he must bear in mind that his dog may not be able to do things that other dogs do.

If the teacher is interested in this subject for the nature study lessons, the following questions may be helpful in the observations made by the children:

- (1) Give the dog a bone and notice how he holds it.
- (2) How does a dog drink?
- (3) Does he sleep much in the daytime? What position does he most often take when he lies down? Does he always choose the same place in which to rest? Can you give a reason for his choice?
- (4) Have you ever tried to make a nice bed for your dog and has he arranged it afterward to suit himself? Do you know whether wolves make beds for themselves in the forest?
- (5) Why should you keep fresh straw for your dog's bed and have his kennel whitewashed inside once in a while?
- (6) Watch your dog hide a bone. How does he do it?
- (7) Which dog do you think is best to have in the farm home? Why?
- (8) If you live on a farm, you may know what a shepherd dog is. What breed is the shepherd dog?
- (9) How many breeds of dogs are there in your neighborhood?
- (10) How many have ever seen the wild relations of the dog—foxes and wolves? How many have ever seen a wolf that looks like a dog?

(c) **THE CAT.** The value of the household cat has, in the minds of many persons, been much overestimated. Doubtless it has grown in favor because it has been the only pet that some children have had. When education teaches the joy in making pets of the birds, chickens, lambs, and many useful forms of life, the cat will be less in demand.

There are many objections to having cats about, all of which are well founded. The good she does in disposing of rats and mice can be met by other means. Certain it is

that there ought to be fewer cats, and owners should be induced or even compelled to prevent them from roaming at large and becoming the public nuisance that they are in many places.

The destruction of the birds by cats is very great. In many places the time has come when it is almost necessary to decide whether we shall have cats or birds. No community can afford to lose the birds. Facts along this line of thought should be taught in our schools, and the children should learn that it is cruel to allow cats freedom during the nesting season, particularly at night—not only cruel, but a wrong in every way to the neighbors.

A cat might be kept in the terrarium cage for a few days in order that the children may study her habits. They will see how the structure of her feet and sly ways enable her to steal upon her prey. A bell kept on her neck may protect the older birds, but what about the young birds at night in their nests in the grass or trees?

(f) RATS AND MICE. While the work in nature study in the lower grades should always consider the study of life and not include taking life, the truth must always be presented, and even the young children can share some of the responsibility in destroying animal life that disturbs our homes and farms. Much unnecessary cruelty has been and is practiced in this connection. Part of the nature study teaching must be from the viewpoint of the animal that is at the mercy of man. Truth, justice, and humane treatment can be taught without danger of sentimentality.

The habits and food of mice will interest the boys and girls. They will enjoy the field mice very much, and the study of the food will have to do with the out-of-doors. The children can experiment by offering the mice seeds of weeds, nuts, grains, and the like. Will field mice eat insects?

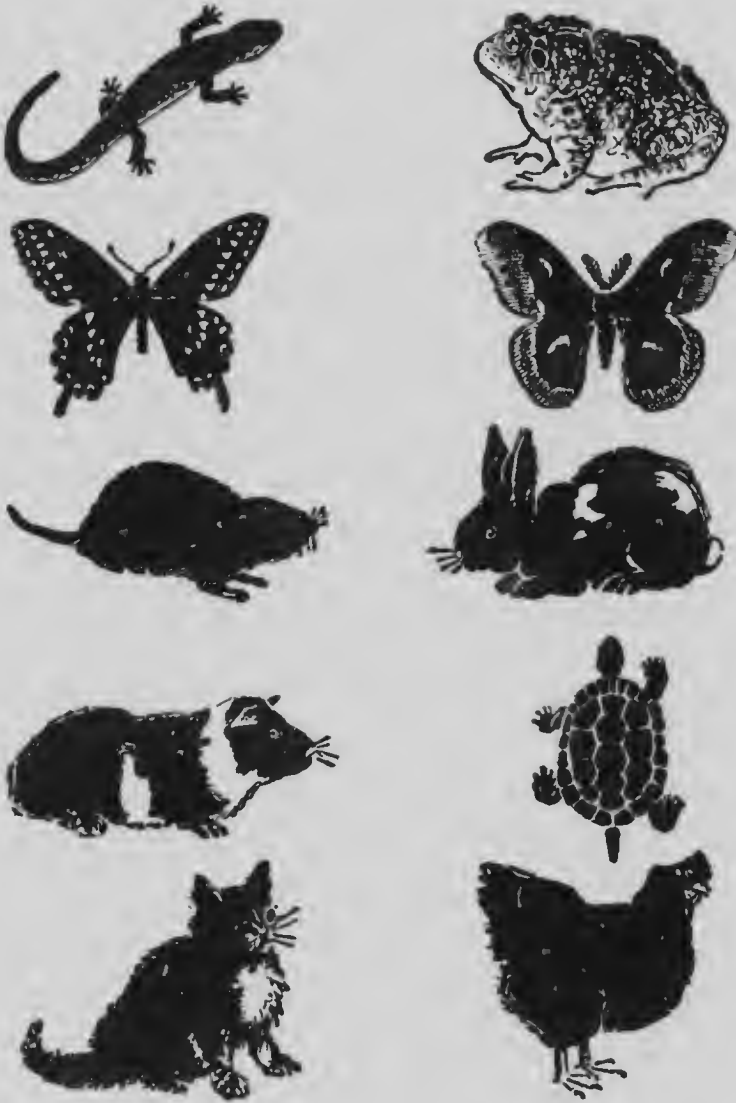
The field mice are most interesting. They are not likely to live long indoors even in the terrarium, but as one comes into the school by way of some young naturalist, its habits can be studied.

(g) **SQUIRRELS.** A trip to the woods in autumn will often give opportunity to watch a squirrel or chipmunk. A caged squirrel is living in such an abnormal way that if children can not study one in the open other animal life might better be substituted.

Squirrels are easily tamed, and the boys and girls will enjoy making a feeding ground for them. An old-fashioned mother who liked to sew on her lawn on summer afternoons always placed some nuts near the edge of her skirt as it lay on the grass. The squirrels accepted the invitation, and it was a pleasure to see the sociability that existed between the little wild creatures and the calm, sweet woman who understood them. A college girl has often watched a squirrel enter her dormitory window in the moonlight in search of nuts left on her desk. Who has not watched some nature lover feeding the squirrels in the parks?

Some things to have in mind in teaching about the squirrels and chipmunks are the following:

- (1) The food—nuts, acorns, and the like.
- (2) It is said that squirrels plant trees; how?
- (3) They can be tamed by establishing feeding grounds near school or home.
- (4) The red squirrel does some harm in mischievous ways to fruit trees. It is said he robs birds' nests; how true is this?
- (5) Professor Hodge advises us to encourage the gray squirrel and fox squirrels, which have a better reputation than the red squirrel.
- (6) Does the red squirrel hibernate? How about the chipmunk? The gray squirrel? Have you ever seen a red squirrel in the wood on moonlight nights? Does he chatter then? Do squirrels make nests for the young?
- (7) Notice the stripes on the back of the chipmunk? How many are there?
- (8) Does the chipmunk always know where he puts his stores? Are the chipmunks solitary or social in their habits?

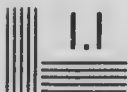


IN THE ANIMAL WORLD  
SOME INTERESTING SUBJECTS FOR NATURE STUDY ARE GROUPED IN THIS  
ILLUSTRATION.



MICROCOPY RESOLUTION TEST CHART

ANSI AND ISO TEST CHART NO. 1010



APPLIED IMAGE Inc.



(g) In what way do squirrels, rabbits, and mice resemble each other?

(h) **RABBITS.** Children usually know a good deal about rabbits, and before attempting to teach anything about them it would be well to find out what the class knows. If a rabbit is kept in the schoolroom a day or two, the children will discuss his ways. They will bring something for him to eat, and be interested in making him comfortable. The teacher might have in mind the following, by means of which observations of the rabbit at school or in the open may be directed:

The rabbit is related to squirrels and rats and mice. Can the children note similar structure and habits in these animals?

Why are Bunny's long hind legs a help to him?

What enemies has a rabbit?

What does he eat?

What harm does he do in orchard and garden in some places?

How many kinds of rabbits do the children know?

What kind of tracks does Bunny make in the snow?

*Note.* It will not be necessary to have the young children learn the difference between rabbits and hares.

**31. Insects.** Insect work of value for young children is that taken up in connection with gardens, either a school garden or one at home. Who will take a bottle from the nature study table and bring to school a caterpillar ("worm") feeding on a cabbage leaf? Place it in the cricket cage with some cabbage leaves and watch the caterpillar feed. It may change to a chrysalis and then to adult form. If eggs can be found, the children will have seen the complete metamorphosis of one butterfly and this will count more for the future observation of insect life than to know any number of insects by name.

Who can find a caterpillar feeding on milkweed? The larva of a Monarch butterfly may be the result of the quest. Keep this in the schoolroom—feed it fresh milkweed leaves and watch what happens. If the chrysalis develops put it into

the terrarium. The Monarch butterfly will sip sweetened water and the children will enjoy seeing it put out the long tube by means of which it takes its food. Have all this work very simple.

Who can find a potato beetle? Have a potato plant brought with it and note the development of the insects from day to day. Can any one find a lady beetle? Teach that some lady beetles help the young gardener. How?

Who can get a housefly? A mosquito? A moth that flies around the candle at night? These insects will remain alive a long time in a bottle and every child may have an opportunity to see them. The insects will have enough air even if the bottle is corked.

Even the young children should know what serious pests are mosquitoes and houseflies. They should learn that manure heaps in which houseflies breed and stagnant water in which mosquitoes breed are menaces to the public. Every one, young and old, must work together to rid the country of pests. Teachers should read in some good reference work the latest viewpoint on the mosquito and housefly, and should learn how and where they spend their lives. Children in the country need this work quite as much as the children in the cities. They need also to share the responsibility of making their world a safer, cleaner place in which to live. See *Lesson on the Mosquito*, page 441, and *Lesson on the Fly*, page 426.

Moths and butterflies have great interest for little children. Many of these insects are large and handsome, and the children learn quite young the marvelous life history which is often demonstrated in a schoolroom. Teachers often make mistakes in statements connected with the metamorphosis of a moth or butterfly, speaking, for instance, of a butterfly as coming out of a cocoon, and the like. It will be well, therefore, if the teacher will learn carefully the following facts and try to fix the knowledge by personal observation:

The most important thing to remember in the study of moths and butterflies is that they appear in four different

forms during their lives. These forms are the egg, the larva, the pupa and the adult.

**THE EGGS.** The eggs are laid singly or in clusters. They are usually found on the plant which is the favorite food of the young. Look for the shining masses of the eggs of the tent-caterpillar on apple and wild cherry trees; the long, small, pale yellow egg of the cabbage butterfly on the cabbage leaf.

**THE LARVA.** The larva, or "worm," hatches from the egg. During this period in its history the insect eats and grows. If you doubt that they have good appetites, undertake to feed a few healthy caterpillars in the spring. If you doubt that they are particular as to the kind of food they have, find out for yourselves whether the apple tree "worm" will eat milkweed leaves or whether the milkweed caterpillar will eat leaves taken from an apple tree.



A PUPA

One of the most interesting things to notice in the study of the larvae of caterpillars is that they occasionally appear in bright new coats, and we find that the old ones have been cast aside. An insect's skeleton is on the outside of its body, and this comes off to give it room to grow.

**THE PUPA.** Of all the forms in which moths and butterflies appear, the pupa is the strangest. Although we speak of this period in the life of the insect as one of rest, it is the time when the most wonderful changes take place in its body.

The queer little object that you see illustrated here is the pupa of the mourning-cloak butterfly. When the caterpillars were about to shed their coats for the last time, they hung themselves head downward from a twig by means of a silken button which they had spun. Then they cast off their skins, leaving the chrysalids or naked pupae hanging; protected from birds by their spiny form, and protected from

many enemies, even from young naturalists, by their wood-brown color which so closely resembles the support from which they are suspended.

Let us next look at the pupa of a moth. This is often inside a covering which is called a cocoon. If you look on the fruit trees or shade trees about your home you may find a cocoon of the cecropia moth. You will see that it is made of silk. This covering was spun by the giant silkworm as a protection against the storms of winter.

When you are studying pupae remember that butterflies do not come out of cocoons. Their chrysalis, or pupa, is always uncovered. In the case of moths, however, the pupa is either inside a cocoon or protected by being underground or in some well-sheltered place.

**THE ADULT.** We now come to the fourth period in the lives of moths and butterflies, a period which has ever had and ever will have an interest for young and old. Since there are many persons, young and old, who can not distinguish between the two groups, butterflies and moths, let us learn the marks by which they may be known.

Butterflies have uncovered pupae; they fly by day. The wings are folded over the back when at rest. The antennae or feelers have knobs on the ends. The body is slender.

Moths have pupae either inside cocoons or protected by being underground or in some sheltered place. Many moths fly at night. The antennae are never knobbed. They leave the wings spread when they are at rest. The body is stout.

Occasionally you may come across insects that very closely resemble butterflies, yet have some characteristics that are similar to those of moths. These are the skippers, so named because of their strong and rapid flight. The antennae have knobs, but these knobs are drawn out and turned back in the form of a hook. The body is rather stout. The pupa is covered by a thin cocoon. In some species the wings are held vertically, in others horizontally. From the excellent works on insect life, teachers can learn to direct observations of moths, butterflies, ants, bees, and other insect forms.

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*Sharp Eyes.* Gibson. Harper & Brothers.  
*Eye Spy.* Gibson. Harper & Brothers.

## 2. PLANT LIFE

- Manual of Botany.* Gray. American Book Co.  
*Our Native Trees.* Keeler. Charles Scribner's Sons.  
*Trees of Northern United States.* Appar. American Book Co.  
*A First Book of Forestry.* Roth. Ginn & Co.  
*Manual of Gardening.* Bailey. The Macmillan Company.  
*Field Book of American Wild Flowers.* Matthews. G. P. Putnam's  
 Sons.  
*How to Know the Ferns.* Parsons. Charles Scribner's Sons.  
*Mushrooms.* Atkinson. Henry Holt & Co.

## 3. ANIMAL LIFE

- Handbook of Birds of Eastern North America.* Chapman. D. Apple-  
 ton & Co.  
*Bird Neighbors.* Blanchan. Doubleday, Page & Co.  
*Bird Homes.* Dugmore. Doubleday, Page & Co.  
*Manual of the Vertebrates.* Jordan. A. C. McClurg & Co.  
*American Animals.* Stone & Cram. Doubleday Page & Co.  
*American Food and Game Fishes.* Jordan and Everman. Double-  
 day, Page & Co.  
*The Reptile Book.* Ditmar. Doubleday, Page & Co.  
*Types and Breeds of Farm Animals.* Plumb. Ginn & Co.  
*The Horse.* Roberts. The Macmillan Company.  
*Insect Life.* Comstock. D. Appleton & Co.  
*Moths and Butterflies.* Dickerson. Ginn & Co.  
*The Spider Book.* Comstock. Doubleday, Page & Co.

## 4. EARTH SCIENCE AND ASTRONOMY

- Physical Geography.* Tarr. The Macmillan Company.  
*Soils.* King. The Macmillan Company.  
*The Children's Book of Stars.* Milton. A. & C. Black.

5. NATURE POETRY

*A Child's Garden of Verses.* Stevenson. Charles Scribner's Sons.  
*Songs of Nature.* Edited by John Burroughs. McClure, Phillips  
& Co.

*Nature in Verse.* Comp. by Lovejoy. Silver, Burdett & Co.

*Poetry of the Seasons.* Comp. by Lovejoy. Silver, Burdett & Co.

TEST QUESTIONS

1. Give five reasons of your own to prove that nature study has educational value.

2. In what ways is the study of animals more desirable than the study of plants for pupils in the lower grades? The study of plants more desirable than the study of animals?

3. Explain some of the advantages of a terrarium in the schoolroom.

4. Mention at least three things that you have learned from the sketch of the robin.

5. Why should birds be protected? What can you do to secure an interest in their protection on the part of your pupils?

6. What instructions do children need to enable them to observe birds carefully? What should be the teacher's preparation that she may give these instructions?

7. Do you have a dread of caterpillars and worms? Is it necessary for you to overcome this?

8. What animals are injurious to growing crops? To poultry? Do these animals in any way compensate the farmer for what they destroy?

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32. Lessons on the Grape.

Written for PUBLIC SCHOOL METHODS by C. F. Hodge, Professor of Biology, Clark University, Worcester, Mass.; author of *Nature Study and Life*.

1. The idea of "Home" and "Country" could not have dawned in the human mind until someone planted something in the ground and developed the patience to wait and

the courage to fight for the harvest. As with the race, so it must seem that the child can not become inspired with vital love of home and country through other and less fundamental activities.

Mabel Musser, aged fifteen, prize gardener of a city school, reported her garden account. It showed that during the season she sold bedding plants, flowers and vegetables to the amount of \$161.85 from a plot of ground 52 feet square. (How much does this represent per acre? Ans. Nearly \$2,600.) A child might thus actually produce from a small garden at least \$1,000 worth of fruits, flowers and vegetables, as a most vital part of his education for citizenship, between the ages of six and twenty-one, and the education would be of incalculably higher value than the material produced. From this and from every point of view no movement in modern education has larger possibilities for every sort of human good than that for children's gardens. The distribution of flower and vegetable seeds in the spring and of bulbs in the fall is a matter of regular routine in many schools and can not too soon be adopted in all.

2. To add an element of permanence and thus develop attachment to the home, the planting of trees should always be advocated, especially nut and fruit trees, and perennial shrubs and vines. Where there is not room for the larger trees, dwarf varieties offer fascinating possibilities; and about every home with a few feet of ground the bush fruits, gooseberries and currants, blackberries and raspberries and the many novelties in this line, are well worth intensive culture for interest, ornament and profit.

3. Of all these permanent garden and home types the grape is by far the best. It is still in its youth at a hundred years, and vines have been known to live for four, and even for six, centuries. Since a grapevine requires only "standing room" and will grow almost anywhere, there is no reason why every school boy and girl in the country should not have a pet grapevine to feed, water, prune and train; to learn how to care for from the age of five or six till he leaves home.

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— 200 — by C. H. B. G.

LIVING DECORATION OF A DINING PORCH

And when he makes a home of his own, will he not wish to take with him a layer or cutting of the old vine?

The suggestion is often made that the grape was possibly the first plant to be domesticated by man. Quite probably it supplied the first primitive summer arbors for the race, and we may imagine that an exceptionally good vine, growing over the mouth of a cave, determined the choice of the first permanent human home. Possibly some boy or girl discovered a vine of rare flavor and excellence and, with sticks and sharp stones, dug up a rooted branch and carried it to their home cave, the first specimen to be transplanted by the hand of man.

Thus, while the children are tending their grapevines they may be rearing something even finer and more beautiful—a fruit of the spirit—the love of home and of country, in their own hearts; and we can not grow too much of this to counteract present tendencies toward irresponsible tenement-house life. Love of home is the very breath of life, of patriotism and of national existence.

4. How many of the class already own grapevines? Let all who have them tell or write about them—how, when and where they got them, how they chose a place for planting, just how they dug the hole, what fertilizer they used in it; how they prune and train their vines, how they care for them, water, fertilize, spray, and protect them in winter. Bring out, if possible, about how much time the care of a grapevine requires in a year and how many grapes each vine produces yearly?

5. From fifteen minutes to one hour a year will suffice to care for a vine, and, while field vineyardists consider twenty pounds per vine a good crop, it is on record that a single Concord vine has covered a trellis 48 feet long so black with well-grown and perfectly-ripened clusters that, as someone has said, "It was like walking through a tunnel in a coal mine." A low estimate would be 500 pounds, or ten bushels of grapes from the one vine. A mission grape, planted by a Spanish woman in southern California in 1842, cov-

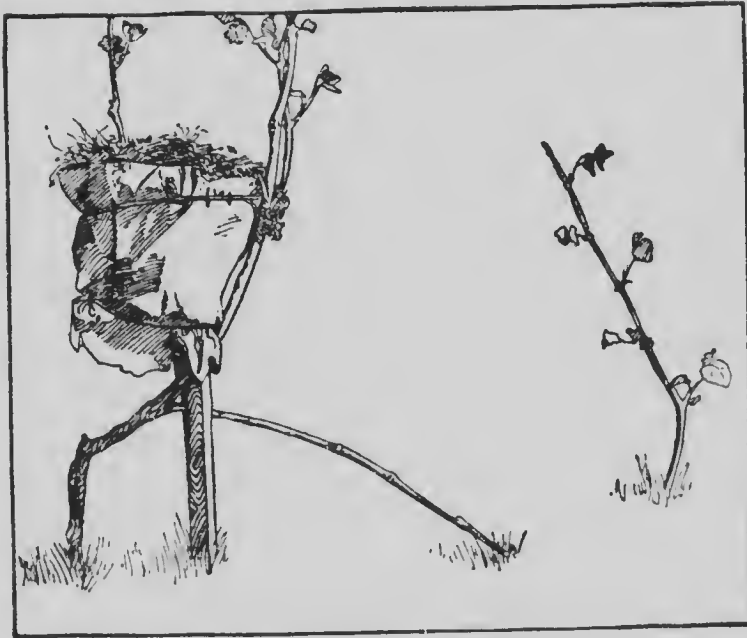
ers a trellis more than one-half acre in extent, under which meetings and conventions are held; its fifty-third year, in 1895, was notable for bearing over 20,000 pounds of grapes. Field culture may keep the vines small and low for convenience in handling, but in these home vines we may work for fine, large specimens, trained to cover porches, bare walls and roomy back-yard arbors. Among our corn clubs and our tomato clubs and the various garden games and competitions, why not see who can make his grapevine grow the best, train it most artistically, and, after two or three years, see who can produce the greatest amount and the finest fruit from a single vine? In all such trials of skill, however, we must be careful not to let the young vine try to bear too heavily. Overbearing may weaken a vine so that it may not recover for years.

6. A vine should not bear any fruit the first season after transplanting; the second year it may be allowed to bear from three to six clusters, according to size and vigor; the third year, about ten pounds; the fourth year, twenty pounds; and even after that it will be best to cut off from half to three-fourths of the blossom clusters to insure against overbearing. The idea is that a young vine will throw all the strength that it ought to spare into a limited number of fine clusters, whereas, if it tried to do too much, the quality of all would be poor or it might not be able to ripen any properly. Ripening the fruit and the wood promptly in the fall is the test. If, when ripening begins, a vine does not ripen every cluster within two weeks, at longest, it is trying to carry too much, and all green bunches must be promptly cut off; otherwise it may not be able to ripen its wood and may be permanently injured.

Study well-kept vines in the neighborhood, to learn how they have been pruned and trained. Possibly there are neglected vines about some of the pupils' homes which they can have if they promise to take care of them. By digging around them, fertilizing the ground and pruning, they may have fine bearing vines the second, or even the first, season.

After the children get interested and full of questions, ask some vineyardist to come to the school and tell them all about the best local condition, soils and exposure, methods of culture, and about the varieties best adapted locally for hardiness, vigor of growth and quality of fruit. In this way the children will learn the kinds that are most certain to succeed, and also those that ought to be tried and experimented with, in order to improve the quality and variety in the neighborhood. This is just the kind of work the children ought to be doing, and how proud and happy a child will be, if, at the annual grape show, he is able to exhibit the finest and most luscious grape ever known in the district, and furnish his schoolmates layers and cuttings and tell them how to grow the new variety!

7. The best way to obtain a new vine is by "layering." Select a strong branch of the variety desired, preferably one



TWO METHODS OF MAKING A GRAPE LAYER

that starts near the ground, about the time the buds shoot in the spring; make the ground rich and fine and in it bury



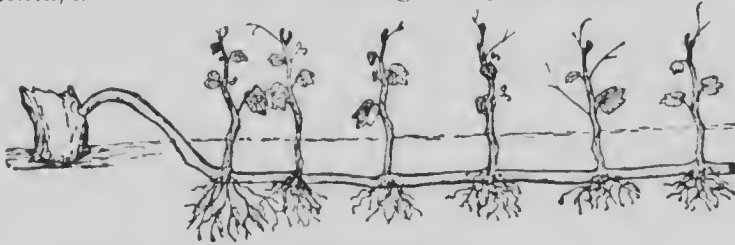
LAYER OF WORDEN GRAPE,  
AUTUMN AFTER LAYING

about four or five inches deep a bend of the branch, about two feet long. Keep well watered, but not too wet. Cut from parent vine when leaves drop in the fall, dig up very carefully, saving all the roots and not exposing them to the air a moment longer than necessary; then transplant into a hole, already dug, where it is to grow permanently. A strong layer, made in this way, may be allowed to bear two or three clusters of grapes, possibly, the first season, and may be two full years ahead of an ordinary vine such as one is likely to buy. If the ground is made rich close to the layer, the roots will be short and very numerous so that it will be easy to

save them all and transplant with scarcely any shock to the plant. If a branch can not be brought down to the ground, it may be put through the hole in a flower pot, before the buds start, supported in place, filled with rich earth, packed with moss and wrapped with paper; a fine pot-grown layer may be secured in this way. It must, of course, be watered carefully all summer. Both methods described above are illustrated here. As many plants as there are joints, or buds, may be obtained by burying the whole branch, cutting the vines apart in the fall.

8. Grapes may be much more rapidly multiplied by cuttings, and this is the common method employed. Just for the sake of learning how, each pupil ought to try, at least,

to root ten cuttings. Any quantity of propagating wood may be obtained free when vines in the neighborhood are being pruned in the late fall. Cuttings must always be made from the season's growth, well ripened. Beginning at the lower end of each cane, cut off about one-half inch below the first bud, then a half inch below the fourth, seventh, tenth, and so on until the cane begins to grow smaller. Throw



GRAPE LAYER

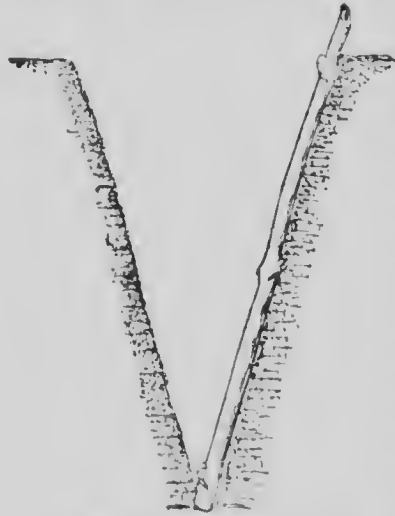
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away the small end. We can thus recognize the lower, or butt end of each cutting and plant it down, *i. e.*, right end up. For over winter, tie the cuttings in a bundle and bury butt ends in the garden where no water will stand.

As soon as the ground can be worked in the spring, dig a row very deep and fine, make a V-shaped trench and set the cuttings as shown on page 418, about six inches apart in the row. In filling the trench press the earth firmly about the butts of the cuttings with the foot, and fill so that the top bud is just even with the surface. With good cultivation and watering, if too dry, well-rooted vines may be obtained, which may be transplanted in the fall. Of course the cuttings may be set where they are to grow, but it is generally more trouble to take care of them.

9. With good care seedling vines may be grown almost as quickly as cuttings, but there is no telling what kinds of grapes they will bear. Three seeds from the same grape may produce three different varieties. This is the most interesting method of all, and one that ought to be indulged in by the boys and girls of the country much more than it is. The fact that many good people raised their vines from seeds

fifty and seventy-five years ago has given us our present fine varieties. Ask some pupil to hunt up and tell to the class the story of the Concord grape, which was originated by Mr. Bull of Concord, Mass. How many Concord vines are there now in the whole country, and how much has the Concord been worth to the American people since its discovery? Does any member of the class know of any good variety which has been originated in the neighborhood? Has anyone found wild seedling vines that showed vigor of growth, productiveness and better quality of grapes than usual?



SETTING A GRAPE CUTTING

In the October grape-shows one of the most interesting features will always be the exhibition of the different kinds of wild grapes to be found in the district. Not one chance seed in thousands is likely to produce a better grape than the Concord, but we never can tell which one may excel it.

10. The real purpose in directing attention to seedlings is to interest the pupils in plant breeding, and this is the road toward continued improvement of everything, from the lowest types of life upward. We must first breed our seeds. How many of the class know anything about breeding plants? How many have tried to raise pure-bred poultry, pigeons, rabbits or anything else? Stories giving the main varieties or breeds of fruits, flowers, grains, vegetables, dogs, sheep, cattle, horses, poultry, are often the most interesting stories in the world. Read or tell the best story you can find and ask your pupils if they know or can find out about the production of new varieties in the neighborhood.

Have them ask their mothers and fathers, grandmothers and grandfathers about it.

While chance seedlings tend to strike back—"revert" to their ancestor, the wild grape, from which they have all come—seeds from carefully bred and selected parent vines are more likely to produce something of value. Excellence of grapes, as well as of pupils, may be expressed on a scale of ten from poorest to best. This has been done, and we find that the little Delaware stands at the head of the class, "No. 10" for quality of fruit. Concord is rated at "5-6," only about half as good. However, in other good characteristics, as vigor of growth, Delaware is only "4," and in productiveness "8," while the Concord is "10" for both these valuable qualities. In size of berry, the Delaware is only scaled "4," while the Concord is "8." In other words the Delaware is a little, delicate though productive grape of best quality, while the Concord is a big, strong grape of poor quality. By crossing the two, we may produce a grape combining the size and vigor of a Concord and the flavor and sweetness of a Delaware; or, we may get something stronger and finer than either.

To do this will take patience, but that is the best thing we can cultivate. Choose the finest Concord and Delaware vines to be found and give the best of care. In June watch the fruit buds closely and a little before they burst on the Concord, select the finest cluster and gently pry the petal-cap off from each tiny bud, and, without injuring the pistil, pull off all the stamens (a pin with a tiny hook bent at the point is the best instrument with which to do it), tie a tissue-paper bag over it so that no chance pollen can gain access to the flowers of this cluster. Also bag five or six clusters on the Delaware to make sure that no insects bring pollen



GRAPE  
CUTTING



from other grapes. When the clusters, both bagged and free,



GRAPE BLOSSOMS

are in full bloom, the pollen is being shed and the tips of the pistils are moist. At this time clip the bagged clusters from the Delaware, and, removing the bag from the Concord, touch the opening stamens of the Delaware to the pistils of the Concord, slip the bag over the seed cluster again and wait for

the seeds to ripen. In the fall the seeds should be washed so as to be free from pulp, then mixed with clean, slightly moist sand and kept in a cool corner of the cellar. In February or March they may be planted in flats in the house or in a greenhouse. With this early start they will make strong vines which should begin to bear the third or fourth season. Then comes the careful study of quality, and the saving of the best.

11. Many details will have to be learned from books, but careful examination of grape blossoms of different varieties, both wild and tame, will be enough to make a beginning. The kinds to be bred together will require special study in each locality, and some authorities even claim that chances for improvement are better if a strong pistillate variety, like the Brighton, Lindley or Jona, is bred with a vigorous wild staminate vine.

To carry experiments through with seedlings will require five to seven years, but the work is highly interesting and instructive and will need little time each year. If it is begun in the seventh grade, the pupil can be reasonably sure of having a result by his third year in the high school, and pupils in the high school might breed the seeds for their brothers and sisters in the lower grades to plant, under careful direction. It is the trying that is worth the while.

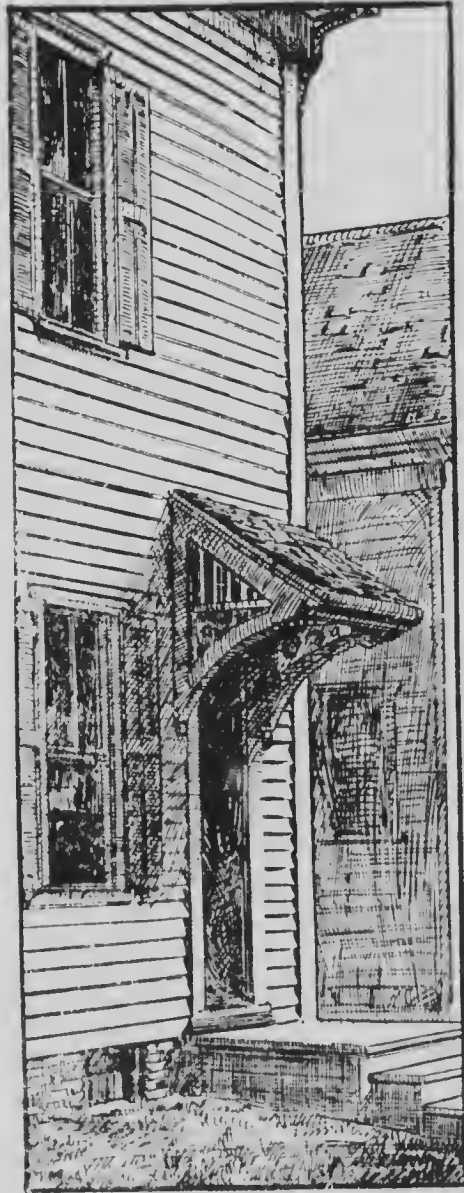
Of course vines one or two years old may be purchased for from ten cents to a dollar each, according to variety.

Practical growers insist that well-started vines one year old are better for transplanting than those which are older and larger, because the feeding roots are then close to the stem, whereas, in the older vines, they will have pushed farther out and be cut off.

12. Large numbers of vines to supply the children of a town or city school may be obtained at from \$13.00 to \$50.00 per thousand, according to variety. Often public-spirited people, or a storekeeper, for the good of the cause or for the advertisement, will offer to give the children fruit trees or grapevines, if they will plant them. This generally results in total failure. The work requires careful supervision at the start. The stock must be the best; it must be handled properly at every stage; the children must be instructed and they should have the holes already prepared before the trees or vines are distributed. As the package is opened, the roots should be dipped in water and at once wrapped tightly in newspapers for the children to carry home, care being taken not to allow the roots to dry out.

13. Grapevines are machines, alive with the passion to turn sunshine into cool leaves and grapes. They love the sun—east, south or even west—and cannot do their best without it. In every town or city there are whole square miles of hot, bare house, stable or building wall burning, cracking and blistering in the summer sun. The grape is the vine whose large shingling leaves give perfect shade and perfect ventilation. The temperature of a house may be reduced by the shade as much as 14 degrees on the hottest days, and if all these hot walls were covered, the furnace-like air of cities might be made as cool and fresh as that of the woods. Plant so as to shade the hottest wall on the place.

If the soil is naturally good, a hole 18 inches deep and wide is all that is required. If the subsoil close to the surface is barren sand and gravel, a hole three feet deep and wide will be none too large. We can never get at it again after the roots take possession, and the satisfaction of seeing the vine in luxuriant growth will amply repay extra digging. Save all



bones from the kitchen and put a bushel of them into the bottom of the hole; also mix an equal quantity of hard wood ashes with the rich garden loam with which the hole is to be filled. When the hole is filled to the depth which will allow planting the vine as deep as it was in the ground before, heap up a little mound in the center so that as the filling and setting is completed the roots will slant downward as they grow; spread the roots naturally and tramp the earth firmly around them.

14. The best time to transplant a grape-vine is in autumn, after the leaves have fallen; before winter sets in heap the earth over it so as to bury the top completely. The rule in transplanting a vine is to cut it back to two buds, but it must

A VERY FAMILIAR TYPE OF REAR ENTRANCE, WITHOUT ORNAMENT OR PROTECTION FROM THE SUMMER SUN.

not be cut at all in case of fall planting. In the spring draw the earth away from the vine and as the buds swell, rub off all but the two strongest ones that start close to the ground, and, after these have made five or six leaves, pinch off the top of the weaker one and train up the other in the way it is to grow. Spring planting is good anywhere and may be preferable to fall planting in some localities.

15. Julian Burroughs says: "If we train a Gaertner up, it will grow to the top of Washington Monument in a season." In nature the wild grapevines luxuriate over the tops of the tallest forest trees. It is this principle of upward growth which will cause so much larger specimen vines to be produced on house walls and porch awn-

THE SAME ENTRANCE, WITH LOVING CARE, HAS BEEN TRANSFORMED INTO A TOWER OF BEAUTY AND USEFULNESS.



ings than are commonly seen on vineyard trellises. With unlimited possibilities of feeding and watering the few vines

about a house they can be grown as large as is desired and trained up to form beautiful, cool, green awnings for second, third and even fourth story windows and porches, and then will go on to canopy a roof garden. A single bud has been known to throw out 63 feet of cane in a season.



ONE YEAR'S WORK OF A  
GRAPE BUD

16. In the accompanying illustration is shown the year's work of a grape bud—four clusters, twelve ounces, of Delaware grapes and about six feet of vine. This bud could not have done so much if many other buds had not been trimmed away. The work of one bud thus gives a measuring stick by which to prune. In pruning in the fall, until a vine becomes large and strong, do not leave more than from fifteen to thirty buds to bear fruit the next season; therefore, prune away entirely all weak canes and cut back, say, the five or six strongest canes to three, four or five buds each, according to the

age, strength and vigor of the vine. The fruit is grown on the new shoots of the season which spring from the canes of the previous year's growth. "Suckers" which start from the root, or "water shoots" that grow out from the old wood

of the trunk, do not bear grapes. They may be valuable, however, in renewing the trunk, in training to reach higher porches or windows, or in making layers.

17. In training over walls and buildings the vines should be supported on wires so as to stand a foot from the surface. This will do away with all objections with reference to causing decay of wood, injuring paint, making the wall damp, staining and so on. Some have claimed that such climbing vines as Virginia creeper and Ampelopsis, which cling by tendrils that root in the surface of the wall, injure brick, mortar and paint, but grapes climb by twining tendrils and so do no damage of this kind. Neither do grapes pull down and break things like wisteria, bitter sweet and actinidia, which wind and twist around their supports. The grape is thus the best natured, the gentlest and most plastic vine in the world to train. We can lead it, train it, change it about from year to year wherever we need the shade. All summer grapevines will cover us with the most perfect shade of any awning we can provide, and then drop their leaves promptly to let in the fall and winter sunshine.

18. Ask your pupils how many of them have all the grapes they want to eat and use at home. Do they raise them or buy them? How much would a year's supply cost? To what uses are they put in the different homes? Grapes are now used in so many ways that no one can object to raising them on the ground of temperance. They are our most nutritious fruit-food and so wholesome that "grape cures" have been developed for pulmonary tuberculosis and other ailments. Every family of ten ought to use at least 2,000 pounds of grapes a year, eaten fresh from the vines and in the form of jams, jellies, butters, raisins, preserves and above all, in unfermented grape juice, a most refreshing and wholesome drink.

19. A number of insects and a few fungi attack the grape. It will be best to ask the pupils to write to their government experiment stations for the latest information on these subjects. Hunt up, and have your pupils search for all the books,

bulletins and magazine articles in local libraries which deal with grape culture. Set each pupil some point to look up and report on to the class. Focus all information gained on raising the best possible grapes for the locality. Get the vines; plant, and take good care of them; study them, and they will be your best teachers. The grape has probably taught the human race longer and more than any other plant in the world.

### 33. Lessons on the Fly.

By C. F. Hoddy, Professor of Biology, Clark University, Worcester, Mass.; author of *Nature Study and Life*.

1. It may seem strange to call the apparently harmless fly, which can neither bite nor sting, the most dangerous living thing in the world, yet this is true. During the Spanish-American war it earned the name of "typhoid fly" by wounding 20,738 soldiers and killing 1,580, many more than the number of American soldiers who were hit by Spanish bullets. It has been estimated to cause one-third of the 500,000 cases of typhoid, with nearly 50,000 deaths, annually. It is claimed to be practically the sole carrier of infection for the millions of cases of summer dysentery, cholera infantum—"summer complaint"—that kill 56,000 human beings, chiefly babies, every summer. It causes an unknown number of infections of tuberculosis and practically all filth diseases. A near relative, the stable fly, has been convicted of carrying the germs of infantile paralysis. Flies are probably even more active in carrying diseases like hog and fowl cholera to animals, because they are not even partially protected by screens and the pests are allowed to swarm at will about their living and feeding places. We are likely to see a wonderful clearing up of animal diseases when flies are exterminated from our farms.

Can any member of the class think of another animal or insect that causes anywhere near this amount of disease and death?

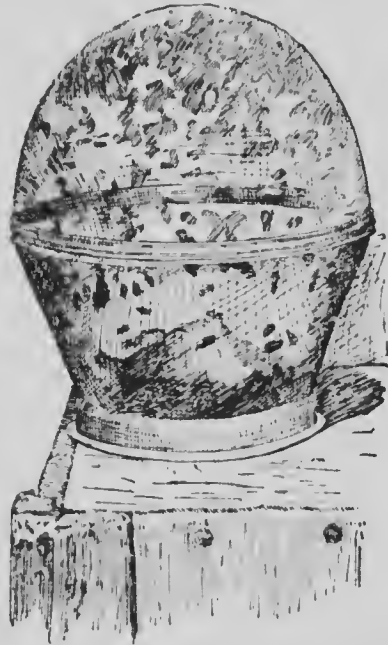
2. Discuss with the class, in a tactful way, the health of the district with reference to flies. Have there been any

cases or epidemics, among people or animals, in which flies may have been the agents or distributors of the infections?

All the above means that we must free our homes and keep our foods clean of flies, no matter what it costs or how much work it may take. It is no longer a solution of the problem of homes to screen windows and doors so long as flies are swarming over exposed foods in stores and markets, on the farms and in dairies. The movement against this enemy must be community-wide, and since, as we shall see, one ignorant or careless household can breed flies enough to vitiate the work of the rest of the community, positively all must cooperate. Not any of us can afford to be ignorant or careless when such vital matters are at stake. Fortunately, with the means now at hand, extermination of the house and stable flies

is one of the easiest problems in the whole field of insect life, if we can secure cooperation of every member of the community. Hence, the main problem is to devise a plan good enough to enlist everybody in the work.

"Why does not everyone do his part?" The answer is: "The people cannot realize it; they do not really believe that the common fly is doing so much harm." Here is a typical case that ought to convince everyone and show the need of country-wide cooperation. We quote entire from the Indiana Board of Health Bulletin, July, 1910:



Why not put the flies in jail and help ourselves to be free? This question started the author's whole scheme of fly-extermination.



## THIS HAPPENED IN INDIANA

'A few days ago a physician in Martin County called on the State bacteriological laboratory for Flexner's antimentingitis serum. Dr. Simonds went to the case and found a seven-months-old baby suffering from a very severe gastro-enteritis with the not infrequently accompanying meningism. The father of the child was a farmer living in a four-room house with few or no modern conveniences. On the wall of the largest room was a family history chart done in brilliant colors, with three columns of lines for the record of marriages, births, and deaths. The parents had been married ten years and six children had been born to them. In the death column were the names of four children, all under two years of age. Another name has since been added to this list.

"The cause of this sad story became evident on inspection. There was a shallow surface well in the back yard, a short distance from an open privy. A large pile of manure lay uncovered, almost against the side of the barn. If this farmer had attempted so unthinkable a thing as transforming his premises into a fly hatchery for commercial purposes he could not possibly have achieved a more brilliant success.

"The family and several of the neighbors were eating dinner on the back porch. Flies were swarming all over the table, but showed a special liking for a particular dish. They were so thick on this dish that it was absolutely impossible to tell definitely what it contained until one of the neighbors swung her arm over the table and cleared them away long enough for one, by looking quickly, to see that the dish contained cottage cheese. The flies were so thick in the house that it was only with difficulty that they were fought away from the field of the spinal puncture and kept from lighting on the instruments.

"On the death certificate the cause of the death of this child was doubtless given as 'Gastro-enteritis.' It would have been more in keeping with the facts to have said, 'Poisoned by Flies.'"

The fact that out of six children, five died under two years of age, is but a small part of the whole story. This farmer may have been producing milk or other dairy supplies, such as "cottage cheese," and for years have been scattering similar filth-disease and funerals chargeable to flies, among the people of a near-by city.

4. Taken all in all, it is a low estimate to say that this filthy insect is costing the United States and Canada 70,000 lives and \$300,000,000 annually in preventable sickness. Even this total is not the worst feature of the situation.

Health authorities everywhere are saying, in effect: "*Clear the air of these universal distributors of filth-disease infections and then we can see clearly to trace out the other means of infection.*" Hence, fly extermination comes to be, in plain, common-sense fact, the necessary first step in the great modern work of disease prevention and in conservation of national health.

5. One bright boy or girl in every family, with some help at the start to secure the proper apparatus, with effective backing by sanitary police and health officials, can exterminate the flies about his home by the first of June, or within about two weeks at any time during the summer, by attending to this work for from ten minutes to one hour a day, according to the seriousness of the situation. The difficulty is in enlisting the one person in each family. This will be a different problem for each city, town or neighborhood, but the only hope of success seems to be by working through the schools. Churches and civic associations, health authorities, the police, and especially the newspapers can all help, but the school comes nearer reaching every home than all other agencies combined. This point must be clear. As things are now, practically every person who thinks at all, is saying: "I would like to get rid of the flies and am willing to do my share, *but* the Winslows will not do anything; they will keep on feeding and breeding them, so *What's the use?*" How can we get everyone to feel that the matter is worth while, that everybody is going to be doing it, and that the success of all depends on each one playing his own part well?

The Winslows, next door, are saying, "We would take care of the flies on our place, but, while the Clarks would do the right thing, in the tenement on the other side are three families of Italians; they are not keeping the place clean, and if we set traps, we would be catching their dirty flies all summer." And they may not stop to think how much safer it would be to catch the "dirty flies" than to have them on their foods and crawling all over them the whole summer long. But, while it is a hard problem, it is well

worth while for a community to be wise enough to work together. The Clarks, the Winslows and the Italians all have children in the schools, and, with the right kind of lessons, they may all be interested in the work, especially if it is made a kind of community game to see who first can make his home flyless.

But across the street the Johnsons are saying: "Tommyrot! We have no time or money to spend on such foolishness. We always have had flies and we always will. It can't be done. Might as well try to catch all the winds. Besides, God made flies for some good purpose; if we kill them all off, something worse will get us. Anyway, if they are as dangerous as they say, we will not allow our children to have anything to do with such work. Let the board of health and the police attend to the flies."

The above illustrates some of the difficulties in the way of securing community-wide cooperation, and suggests the following questions, which may profitably be given to the pupils to discuss and answer:

(a) How could the board of health and the police do it? How often would they have to visit each house? How many officers would it require to do this? What would it cost? Who would pay for it? How much would taxes be increased?

(b) How much less would it cost if each family did the work on its own premises? How can we reach homes in which the people can not understand our language? How can we reach families who refuse to help and insist on feeding and breeding flies to infect the neighborhood? How do the board of health and the police handle other public nuisance? Have we any other public nuisance as dangerous as this?

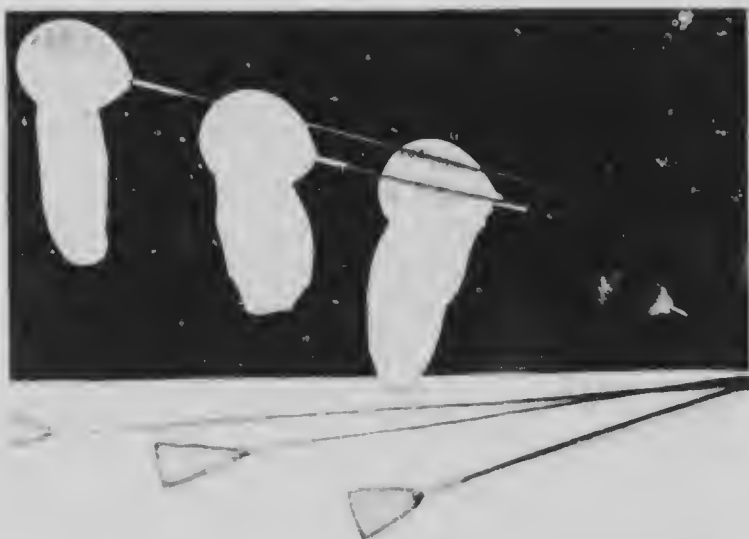
6. A typhoid epidemic of 224 cases and 10 deaths was estimated to have cost the people of a city \$100,000. It was believed to have had its origin in impure milk and, probably, flies. How much have city infections, in which flies may have played a part, cost your community during the



### A DAY'S CATCH

Photograph C. I. H. 76

The trap was placed in the high part, with no window of the stable, where the flies were thickest, and gunny sacks were hung over the other window to darken them. All the flies around the barnyard that tried to get in or out were caught.



Photograph C. I. H. 77

### EFFECTIVE ARMS WITH WHICH TO FIGHT FLIES

Nets and water will keep flies out of a stable. These are what we need to kill the flies that get into a stable. With these we can reach the ceiling without touching the floor with our traps. The water is made by filling a wooden washtub or a tin can with water or other heavy liquid. The nets are made of netting, cheesecloth or muslin. They are held up by three rods, light, thin handles, but extra care must be taken in their use.

Handwritten notes and markings on the left edge of the page, including a vertical column of text and various symbols.

Main body of the document containing faint, illegible text and markings.

past year? How much would it cost to exterminate the flies? How can we be sure as to what is causing much of our disease until we have cleaned up the flies? Compare the number of cases and deaths from typhoid, enteritis (cholera morbus), summer complaint (dysentery), tuberculosis, hookworm, spinal meningitis, infantile paralysis and any other filth infection common in the city, town or neighborhood, for a series of ten or twenty years back. Are conditions growing better or worse? If your locality has cleaned up and exterminated the flies in really community-wide fashion, including markets, provision stores, hotels and restaurants, milk depots and farms, especially those that produce milk, cheese and butter, what has been the result on your vital statistics?



7. The method to be employed is to get the fight out-doors where it belongs. We will suppose that everybody is convinced and ready to do his part. We have said when a community reaches this point of civic unitedness, fly extermination is the easiest of insect problems, provided everybody knows *what* to do. The first thing to decide in this fight is where it is to take place. The flies are breeding out-doors.

Can we ever hope to get rid of them by screening houses and fighting inside? What is the cost of screen windows and doors for a house? (\$15,000,000 is the estimated annual expenditure for fly screens of the United States and Canada.) A house with screens is a good fly trap, but the pests are let out too often after they have obtained the food with which to make fly eggs. It is not much more

Contains over 10,000 stable flies caught by the author's son over his cow one day. If they had not been caught, they would have taken nearly a pint of blood. The boy had to stand and sweep around the cow with an insect net. Now that we know that the germs of infantile paralysis are carried by the stable fly, we must rid our homes and streets of this dangerous pest.

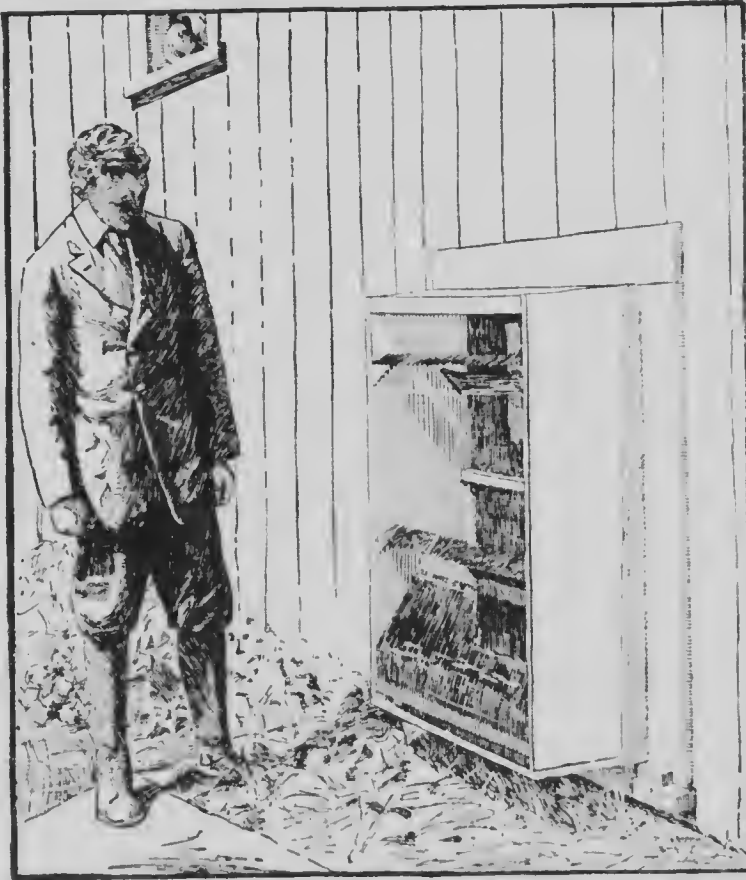
work, and is a good deal more sport, to catch a bushel of flies by the method to be described than it is to catch a dozen "by hand," at any one time, especially early in the spring, when there are not many flies outside around a home. Thus, with a skillful leading of the discussions, it will not be difficult to bring a class of boys and girls to the conclusion that the "war must be carried into Africa"—into the enemy's camp, out-of-doors.

8. The next point is to know the enemy, to know something of the kinds of flies. How many pupils, or even teachers, really know a house fly when they see one and are able to distinguish it from the 13,000 other kinds of flies? From 90% to 99% of the flies found in the house are likely to be typhoid flies (*Musca domestica*). There are at least two other kinds that we must include in our war of extermination, the horn fly (*Hæmatobia serrata*) and the stable fly (*Stomoxys calcitrans*), the bloodthirsty pest of cattle, which, being a near cousin of the tsetse-fly of Africa, as stated, inoculates the virus of infantile paralysis with its bite. The blue bottles and flesh flies, which lay their eggs or living maggots on meat; the screw-worm fly, which deposits in wounds of living animals, or, possibly in the nostrils or ears of persons while asleep out-of-doors; the black, or deer, flies, which breed in running water, and the bot flies of the horse, cow and sheep, are all species worth studying where they abound, as are also the apple maggot fly and the root maggot fly of the garden.

The typhoid fly is readily distinguished by its relative numbers about houses and also by the fourth vein of the wing, which bends forward at a sharp "elbow" almost to join the third vein at the tip of the wing. Stables and horn flies can be collected around stable or stock; the stable fly is about the size and color of a house fly, but is provided with a sharp, piercing proboscis. The horn fly, often found clustering in masses on the horns of cows, is smaller, slender, dark and steel blue.

9. Reasons for every step in our extermination are to be found in the life history of the fly itself. That is, in order

to be sure that we have found the easiest and best way, we must examine the whole chain and find the weakest link.



From photograph by C. F. Hodge

Stable window fly-trap in position. A cow stands close inside. Without baiting or care of any kind, this trap picked up practically all the stable flies that came to the place. It also caught the horn flies and at least one bot fly, and one morning was found filled with mosquitoes. In a stable in the woods near a spring a similar trap caught thousands of black flies which were tormenting the stock.

A fly lays its eggs in any wet, warm, decaying or fermenting matter, animal or vegetable; horse manure is preferred and human waste is next, hence, the great danger of



spreading all intestinal diseases; no form of earth closet can ever possibly be made sanitary; the next favored depositories for eggs is in the filth of pig pens, poultry houses, cow stables, bodies of decaying animals, fermenting garbage, weed piles, lawn clippings, decaying straw, hay or other refuse—even to the filth in spittoons. Tobacco is commonly used to kill many kinds of insects, but house flies have actually been bred out of the snuff on a druggist's counter. In cities the miles of gutters and sewers, the stables, stock yards and slaughter houses, breweries, public dumps, accidental accumulations in alleys and vacant lots, and about coal, lumber and factory yards; in the country the miles of roadsides and acres of barnyards and pastures—all these mean that breeding places and materials offer the most difficult, laborious and expensive point of attack. If there are flies about, they will always be able to find something in which to lay their eggs. Moreover, every garden needs its compost heap and every farm its cords of manure. These things in their proper places, are valuable commodities, not nuisances. Shall we permit the flies to make it impossible to use them as we need on the land?

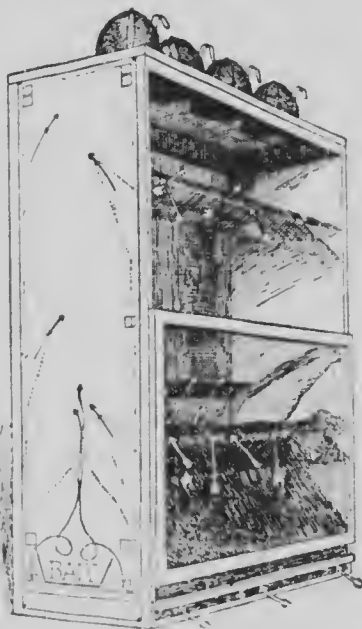
10. With pupils of sufficient advancement discuss proper disposal of all material in which flies may breed in a home which is typical of the neighborhood. Properly handled, much of this material is valuable as fertilizer. It is of greatest value when perfectly fresh; from 55% to 65% of its strength as fertilizer is dissipated into the air by antiquated methods of "rotting." This fact has been demonstrated by the agricultural experiment stations. Secure the most recent bulletins from your nearest experiment station, and go over the ground with the class.

Proper sanitation of a farm home imposes a two-fold obligation; first, in providing a Stiles sanitary outhouse. This will absolutely prevent flies from breeding in human wastes. Of course, a water closet with septic bed or tank is equally sanitary, but is more expensive. No arrangement of dust or earth closet can possibly be worked entirely

to prevent eggs from being laid and maggots from developing in the material.

Second, to be sure that all stable manure, during warm weather, at least, is daily gathered into a spreader and immediately put under or on the ground. If plowed under, the eggs already laid in it will probably develop into flies, since Stiles has found that they will work their way to surface even though buried six feet deep. If thinly spread on the ground, in dry weather, most of it will become too quickly dried to permit the maggots developing in it. Fly eggs will not hatch if dried in hot sunshine.

For town and city schools discuss with great care and thoroughness not only proper disposal of all fly-breeding filth about the individual home, but effective organization of the work of collecting, removing and disposing of all such materials. This latter is one of the most urgent needs in the whole field. Every town or city fly campaign, with only one or two exceptions, has been thwarted by some filthy stable where people were both feeding and breeding flies by the millions. One large stable on an alley, within a block of the Lexington Market in Baltimore, when visited in July, 1910, contained a pile of manure about 40 feet in diameter at the base and 12 to 14 feet high, and just beneath the surface it was a moving, writhing, crawling mass of mag-



Explanatory model of stable window fly-trap. There are two trap-folds on each side and an entrance also along the bottom of both sides. The arrows indicate some of the entrance holes along the trap-folds. The marks on sides of trap show form of construction (Drawn from photograph, by the author.)

gots. The pile must have contained, if they could have been sifted out, not less than ten barrels of maggots. Shall such a thing as this be permitted to vitiate the best efforts of many people, scatter filth and disease in thousands of homes and over the food supplies of several hundred thousand people?

Let the class investigate the method of garbage and filth disposal in local use and decide whether it is efficient in preventing the breeding of flies. If not, in what way could it be made so? Consult your board of health about the problem and ask its most active member to visit the class and discuss its solution. Try to find out how the people of the city, especially the school children, can cooperate with the board of health in having the work most effectively done.

Along with regular collection of garbage and rubbish, every city needs a system of manure disposal which shall not allow accumulations anywhere for more than seven days, during the months from April to November. Garbage disposal has been made a self-supporting, or even a paying department of public service in some cities. By proper organization there is no reason why the handling of stable fertilizer should not only be made to pay for the work but pay stablekeepers as much, or even more, than they receive from private parties, who can not be depended upon to remove the accumulation regularly. Definite circuits with teams or autotrucks could be arranged so that small or partial loads would not require unnecessary traveling, and delivery could be all contracted and planned for, to avoid handling twice. Every citizen could file orders for the amount of fertilizer he requires for lawn or garden, stating when delivery was desired, and in this way small amounts could be distributed most economically on regular delivery circuits. Children's gardens everywhere, vacant lot gardens, suburban homes and truck gardens and all public gardens and parks could be adequately supplied probably at much less cost than by irregular private service. Civic organization

of this work may thus not only minimize breeding places for flies in cities, but result in improving the land as well.

11. The rapidity with which flies multiply is not generally known. A pair of flies may produce from 120 to 150 eggs at a laying and may live to lay at least six batches of eggs, at intervals of eight to ten days. The eggs hatch in a few hours (eight to twelve) in warm weather, grow as maggots for six or seven days, crawl into the ground under the manure, or into the cooler portions of the pile to pupate, remaining as pupae about three days, and thus complete the cycle from egg to adult in about ten days. If we start out with a pair of flies May 1st, how many flies will we have by the middle of the summer, supposing the young flies are half females and these begin to lay eggs when ten days of age? Let each member of the class figure this out, or verify the following figures:

May	10	the number will be	.....	152
"	20	" " " "	.....	302
"	30	" " " "	.....	11,702
June	10	" " " "	.....	34,302
"	20	" " " "	.....	911,952
"	30	" " " "	.....	6,484,702
July	10	" " " "	.....	72,280,800
"	20	" " " "	.....	325,633,300
"	30	" " " "	.....	5,746,670,500

This last figure means about 143,675 bushels of flies from one pair in three months. Any pupil who is fond of figures may continue the breeding through August and September. One man has done this (in *World's Work*, for May, 1912) and the result he reaches as the theoretical increase of a pair of flies for a season is:

1,096,181,249,310,720,000,000,000 flies.

Why not put that pair of flies out of business in May? Can anyone suggest a more common-sense solution of our problem?

12. In or near the tropics flies breed throughout the year; in warm places, heated basements, bakeries, kitchens, etc.,

they may do so the year round, in any latitude. For all the northern United States and Canada, however, very few flies survive the winter. These, so far as we know, are young adults which find shelter in crevices about buildings, cracks in lumber piles and similar places. They emerge from winter quarters with the advent of warm weather and begin to feed, preparatory to laying eggs. Naturally, they are ravenously hungry and if every family had its flytraps set and well baited at this time, it would be easy to catch every fly before it began to lay; then the whole fight would be over almost before a community realized that hostilities had begun. The city which realizes that over 143,000 bushels of flies may result from one pair of flies in half a season, should take courage in the knowledge that the community may be flyless within two weeks after beginning the fight in the spring; further, that it will remain so as long as this level of civic intelligence is maintained.

13. A fly feeds for two weeks before laying the first batch of eggs. This is one of the most important facts to know; a fly must feed actively for about fourteen days (at least ten days) before it can mature its first eggs. This delivers the enemy into our hands. With everything most attractive to flies carefully collected into one place, the garbage pail, and over this a trap which picks them up as fast as they come, we have a vacuum cleaner of the air for flies. With every home equipped in this way, every fly would catch itself as soon as it began to feed, no eggs would be laid and the last fly to hatch out of the barnyard, or to emerge from winter quarters, would be the tail end of the procession into the exterminators.

To get everybody to believe that the plan will work, and to have faith enough in it to really stick to it, to the last fly, for ten days or two weeks, is the main thing in a fly campaign. It is, of course, best to "begin early," for "One pair in April or May means millions in August"; but in one instance it was put into operation in midsummer, with flybreeding in full blast, on a Maryland farm and



PHOTO BY A. J. H. S.

### ASLASON'S CATCH

The trappers had the luck in the snow to get the big brown bear. The trappers were surprised to find him and not what caught the bear. The bear was the wrong way towards the cabin who was the first prize of the trapper. The man he caught.



country place, where extermination proved, as who tried it wrote, "So simple as to be almost humorous and so effective as to be little short of the uncanny." This last refers to the sudden disappearance of flies at the end of the ten-day period required for eggs already laid to emerge as adult insects.

One out-door exterminator, in the cover of the garbage can, with everything most attractive to flies carefully and immediately put under it, kept a suburban home so completely free that breakfast, dinner and supper could be enjoyed on an unscreened porch without a single fly at

table for five days at a time—and this, when flies were thick in the city and around near-by homes. It is simply a question of letting the flies catch themselves as fast as they come, all day long, early mornings and long, hot afternoons, when the kitchen offers no attractions; remember, you have to catch a fly but once. If none feed and go back to the stable to lay, they disappear like magic. Any home



First model of exterminator for experimental purposes. The arrows indicate where the flies may enter. This trap caught 2,500 flies in 55 minutes, it caught 16,000 flies the first day it was used.

can do this, and as soon as it is done in every home, the filth-disease fly problem will be a horror of the past, along with the great plagues, smallpox and the black death.

14. Study carefully the illustrations of devices shown in this lesson; experiment with any other devices that may have proved effective locally, and try to invent better traps to catch all flies about kitchen and stable windows.

In order to insure getting the last fly about a house, we need effective weapons. It is the fly that you can not



reach on the ceiling that escapes to lay eggs to keep up the fight. No one who has not used one can realize how easy it is to get all the flies in a house with a two, three or even four-foot swatter, with which one can reach the ceiling without stretching, and the floor without stooping. Swatters are objectionable because they injure furniture and soil walls or ceilings, and, besides, it is necessary to pick up the dead or leave them to be swept up later. The nets



"OUT-DOOR FLY EXTERMINATOR"

Final form adapted for manufacture by the National Manufacturing Co., Worcester, Mass. 1, trap complete with its own bait box; 2, trap showing total view for attachment to garbage can cover; 3, trap attached. The Republic Metal Co., of Buffalo, N. Y., on special request of Dr. Hodge, have arranged to stamp out the can covers with all holes cut and prepared ready for attachment to the exterminator. This will make it all simple and easy and eventually convert every garbage can and swill barrel into a vacuum cleaner for flies.

shown in the illustration are free from these objections, and a neat little hand device known as the "I-Got-Him-Fly-Catcher" is on the market, which catches the flies in a cone of tanglefoot paper. It is to be hoped that this will allay the fears of parents who object to allowing their children to help in fly campaigns, since they will not need to handle or even touch the flies in any way.

15. Working together to make the world better is the most inspiring thing in life. Suppose all the school boys and girls set to work next spring to see who first can have his home completely clean of filthy flies. How quickly we

could have a whole country of clean and healthful homes! Many communities are doing just this. Why not all? Then our country will be the first to be free from the time-old pest, the House Fly—Disease Carrier.

### 34. Lessons on the Mosquito.

Written for PUBLIC SCHOOL METHODS by C. F. Hodge, Professor of Biology, Clark University, Worcester, Mass.; author of *Nature Study and Life*.

1. For ages everybody has been breeding mosquitoes, because nobody knew any better. Now that we have learned how to get rid of the pests, everyone should be careful to do his part for the comfort and safety of himself and others. No member of the community has any right to breed mosquitoes to suck the blood of his neighbors. Along with flies, fleas, lice and bedbugs, mosquitoes do no human good in the world. They cause great discomfort, annoyance and pain by sucking the blood of men and animals, often poisoning the s' and causing serious irritation. Certain kinds, the *anopheles*, when they bite, inject into the blood the germs of malaria (ague, chills and fever). Another kind, the "yellow fever mosquito," *Aedes calopus* (formerly named *Stegomyia fasciata*), carry the germs of yellow fever in a similar manner. The latter is one of the common rain-barrel and cistern mosquitoes of the tropics and of the south United States. A large part of the annual bill for screen windows and doors, \$15,000,000, is chargeable to presence of these pests, and the bills for malaria and yellow fever and depreciation of real estate, due to them, run up many millions more. In all these ways in the past the swarms of mosquitoes have driven man before them from the places they infest. Now we have discovered ways and means of completely banishing these ancient and blood-thirsty enemies of man and. How can we do this?

2. To be able to conquer an enemy we must first know about his ways of doing things, his plans and methods of working. The first thing we learn about mosquitoes is that they do not fly far. Except for a few migratory kinds that breed in the salt marshes along sea coasts, our common mos-

quitoes seldom fly more than two or three hundred feet from the places where they breed. Next we learn that mosquitoes all breed in stagnant or slowly flowing water, in which fishes can not, or do not, live—rain-barrels, cisterns, watering troughs, tin cans or bottles, gutter, roadside and barnyard pools, cow steps in bogs and in pockets, holes or patches of weed, in and about the margins of ponds, lakes or streams. Hence, the first thing to do is to drain or fill all undesirable water holes and scrape clean of weeds, stumps or rubbish, and grade the shores of all streams and ponds, so that, as they rise and fall, no mosquito breeding pockets will be left. Any water which can not be drained or filled or stocked with

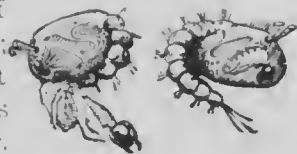


"CULEX PIPIENS," MALE AND FEMALE  
Female at left

fishes should be covered with crude petroleum or kerosene oil, one ounce (a table spoonful) to fifteen square feet of surface.

3. The eggs of many common rain-barrel mosquitoes may be readily seen in the form of "rafts," each containing from 200 to 500 eggs—the laying of a single mosquito—stuck together on end and floating on the surface. They are usually laid very early in the morning and generally hatch a little after noon of the same day. *Anopheles* mosquitoes scatter their eggs singly on the surface of the water and they float until they hatch. They are harder to find in the open, but may always be obtained by confining well-fed *anopheles* in an aquarium—a tumbler is large enough. The yellow fever mosquito also scatters her eggs singly, but they sink to the bottom and laid.

4. Young mosquitoes do not look as much like their mothers as little chickens look like hens. Indeed, this is true of most insect larvae. Butterfly and moth eggs hatch into worm-like caterpillars; eggs of bees, ants and flies, into maggots; those of beetles, into grubs; so that it is not strange that mosquito eggs hatch into "wigglers" in the water.



PUPAE OF MOSQUITOES

Larval skin still clinging to one at left. (From photograph from life, by the author.)

5. As we study the wigglers, we see that they grow very fast—which means that they find food in the water too small for our eyes to see—and in about seven days shed their skins and change into quite different looking wigglers. They are known as *pupae* and correspond to the chrysalides of moths and butterflies. In this stage the insect has no mouth and does not feed, but spends its time breathing quietly at the surface of the water while it is very busy inside tearing down its wriggler organs and making them over into eyes, feelers, proboscis, wings and legs for the real mosquito which comes out of the water at the end of about three days. Thus, we find that a mosquito may grow from an egg in about ten days. Pictures of the eggs and wigglers and of the different kinds of mosquitoes may be found in Volume Five, page 47.

6. These lessons are intended only for localities where mosquitoes are pests, or where they would be, if not properly attended to. In general, we should plan to have two or three good, pointed lessons as soon after school begins in the fall as possible, when the pests are at their worst, or the memories of their torments are fresh, and specimens in all stages are abundant. Interest started then will give time to make plans for the real campaign in the spring. Later in the fall, or at any time during the winter, a lesson on hibernation may keep interest alive and be of great practical value. At this time search with a lantern in dark, damp, corners of house and stable cellar is likely to prove a revelation. Hundreds or thousands of mosquitoes may be seen clinging to

walls and ceilings, waiting for spring, when they will begin to suck blood and lay the eggs that will produce the summer's swarms. The early spring pools are likely to be swarming with wrigglers, and the main lessons should be timed to prevent these from emerging from the water.



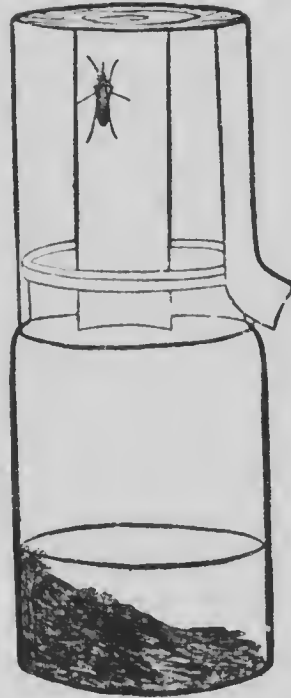
POTILE FOR CATCHING  
MOSQUITOES

7. In beginning the lessons the teacher may collect a few specimens, or, better, ask some interested pupils to bring in all the different kinds of mosquitoes they can find, with eggs and wrigglers, so that the whole class can see exactly what they are to look for. The specimens can be kept in tumblers or bottles with netting over the tops. After the pupils have studied them so that they will be sure to distinguish mosquitoes from gnats or crane flies and have gone over the life history, including the possible diseases and annoyance caused by them in the district, each child should be encouraged to contribute all it can toward developing a plan of campaign which shall make extermination possible. The chief object is to develop interest and power in the children themselves to study and work out such problems.

8. Clearly the first thing to do is to have the pupils hunt over their own home premises for breeding places, and all should cooperate, being careful to get permission in doing the same for neighbors who do not have children in the school. It might be well to unite in making a map of the breeding places in the district. In carrying on this survey

each will do his best to clean up every breeding place found about his own home, and will report what he has done, with the result to the school.

It will often be discovered that some trifling bit of carelessness is filling the neighborhood with mosquitoes. In one case a furnace ash pan, set outside of a cellar window, was found green with algae and alive with *anophles* wrigglers. Probably several cases of malaria, near by, had already been caused by the mosquitoes which were hatched out of it. A cistern, where a house had burned, filled another district with a plague of mosquitoes. A rain barrel, the water barrels on railroad bridges, a clogged roof gutter, a big hole in a hollow tree containing nearly a barrel of water, a hole among the rocks in a quarry, were each found responsible for a similar plague. All such could be emptied or treated with kerosene, to the great relief of homes in the neighborhood. In one case the magnificent water lily and lotus ponds in a park filled the place so full of mosquitoes that people could scarcely walk through it. Some boys, when they learned what to do, easily caught minnows from a brook near by, put them in the ponds, and had them free from mosquitoes in a few days. It was fun for the boys; it saved a beautiful feature of the park and made unnecessary the expense of filling the ponds, and restored the park to the enjoyment of thousands of people. Many things are so easy, if we only know how.



JAM BOTTLE AND TUMBLER ARRANGED TO OBTAIN MOSQUITO EGGS

Large dumps with stagnant pools here and there, swamps or bogs and weedy brook channels, may be covered by excursions, in which each pupil carries his own can or bottle of oil, hoe or garden rake; thus many hands may make light work of the more difficult propositions. This temporary work will naturally become the basis for solid, permanent improvements in cities, towns or country neighborhood.

9. The case of Beaver Brook, in Worcester, Mass. is a good illustration in point. This brook winds for nearly two miles through the residence section. As the city grew, the low places in the valley were made dumps for rubbish and the brook itself was carelessly dammed up by these accumulations. Fine groves along the brook valley were killed by being flooded and were converted into festering swamps, which bred mosquitoes of both the malarial and common forms, enough at certain seasons to render the region well-nigh uninhabitable. The illustration shows the children of Downing Street School on a nature excursion, under careful direction cleaning up and oiling all the pools along both sides of the brook channel, wherever mosquitoes were found breeding. The excursion was well timed, about the first of May, when the pools were black with mosquito pupae just ready to come out of the water; and the work was so well done that for the first time in years the people could enjoy their gardens and porches at that season without being molested. The city was not slow in demanding permanent relief; a strip of land was taken for a wide street, and in it the entire brook channel was laid in cement. An ornamental drive is planned to connect two large parks and thus a public nuisance is being transformed into a great and permanent improvement.

10. Many people in your neighborhood may claim it is not possible to rid the district of mosquitoes by treating the stagnant water, because they breed in weeds, grass, damp earth, the vines about the houses, in the trees, or even in the air.

Take about a hundred wigglers, lay them on blotting paper, let them dry in the air for a day, put them in water—



EXTERMINATING MOSQUITOES  
Downing Mosquitoes at Bayonet Point, W. Va., U. S. M.



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paper and all—and see if they come to life. Do the same, using mud, grass or leaves, in place of the paper.

Place in an aquarium or fish globe, a small fish, preferably a young sunfish, bass, perch, trout, pickerel or other native species, and keep it there until it is at home; then put in a few hundred or thousand wigglers. Let each member of the class try to count how many the fish takes for a meal. Repeat the experiment using, instead, a newt, salamander or young turtle. Will the results explain why wigglers are thick in some pools and not in others? Make as complete a list as possible of the enemies of mosquitoes in the water.

As opportunity presents itself, direct the pupils to study the work of birds in destroying mosquitoes in the air. In a feeding test a bob-white chick ate 568 mosquitoes in two hours. Swallows, swifts, flycatchers and many other birds, as well as bats, toads and even dragonflies, help to hold mosquitoes in check.

Finally, to impress the need of careful, thorough work, ask for volunteers to count a good-sized raft of mosquito eggs. This may easily be done by turning the raft wrong side up on the tip of the finger and counting the rows of eggs with a magnifying glass. Take the average of the counts, or the nearest even hundred and have the class figure how many mosquitoes might be produced from a single pair in one month, three months, six months, allowing ten days for a generation and supposing that one-half are females. It will add to the interest if each pupil makes the count independently and writes the result on a slip of paper, none of the results being announced until all have finished counting.

This lesson will serve to show the power of insects, if they once get the start of us and if we give them a chance to multiply.

## APPENDIX

### PROBLEMS IN PHONIC READING\*

"A problem that reaches the child's mind through its ear may be called an ear problem, and one that is grasped through the eye may be called an eye problem. Word recognition has in the past been learned almost entirely through the eye, but ear problems are much more effective than eye problems in aiding the child to associate the letters with what they say. The child has more to do in solving an ear problem than an eye problem. He has to separate the word to be written into its elements by sounding it; he has to decide what letters "say the sounds" as he makes them; and he has to write the letters in their proper order. This makes the association of the letter with its sounds very definite. There is no other method of fixing facts, or principles, or associations in the memory that is so effective as using the hand to work out or represent them. When the mind of a child has to guide the hand, the intellectual effort must be definite, and the result on the memory is more positive and more lasting than if no productive or constructive effort is made. Ear problems are of great value, too, because children are made happy by the ability to write words themselves. The teacher may use the child's joyous pride in the acquisition of this power to sustain and develop his interest in reading, spelling, and writing so that these studies never become wearisome.

"Ear problems should precede eye problems, not only in preparing the children for phonic combination and phonic analysis, but in the work of defining in the child's mind the association between each new letter and what it says. When each new letter is introduced it should be used first in solving ear problems. The need of the new letter can best be revealed by giving an ear problem that cannot be solved without it, that is a word that cannot be written with the letters already known. When the pupils find a sound for which they have no letter representative they are ready for the new boy or girl letter. In the early stages of learning to recognize visible language most of the teaching done in class at the blackboard should be done by ear problems.

"Eye problems are simply problems in recognizing words or sentences that are new to the children, and translating them into oral language. In ear problems the pupils make visible language to correspond with the oral language used by the teacher. In eye problems the pupils use oral language to correspond with the visible

language made or shown by the teacher. Eye problems should be given to the children both when they are out in class, and when they are at their seats, as soon as they are far enough advanced to be able to try to read silently from cards or books, containing suitable reading matter for them.

"A great variety of problems may be given to the pupils for work at their seats even in the very early stages of their progress in word making and word recognition. The following are illustrations of many problems that may be given for seat work:

"Make as many words as you can with the e letters—a, o, m, p, t, s, and be able to use each word in speaking to the class, if called upon to do so.

"Make as many words as you can beginning with m, or p, or s, or any other letter.

"Make as many words as you can beginning or ending with st, sh, or any other combination.

"Fill in the blanks to make as many words as possible: m—p, s—p, p—t, r—h, or t—e, ne—, fa—, or—nd, —sh, —rt.

"There is practically no limit to the variations that may be made of each problem for work, while the pupils are at their seats.

"When pupils are fairly well advanced a good exercise for seat work is to start them with a word, say "corn," and ask them to make as many words as possible by changing one letter at a time in consecutive order, for instance, corn, lo rn, barn, bar, cars, card, hard, ban l, band, bend, lend, mend, send, sent, ten', tens, hens, etc. When they are far enough advanced this problem may be given still more definitely by saying, "Change 'corn' to 'bend' with as few changes as possible."

"In the early stages of the work of learning to read the problems may be given in the form of interesting games which will give the children opportunities for amusement while they are learning to make and recognize words. Each pupil may be made to personate a letter by having it written on a slate which he holds in front of his breast. If slates are not used the teacher may have a set of cards with the letters painted on them, to hang around the necks of the children, or to be fastened in front of them. The following are among the many ways in which ingenious teachers may use this method of assigning problems in reading:

1. Pupils stand in a row, teacher names those who are to step out, they face the class as they are called out, and the pupils name the word made by the letters on their slates.
2. Exactly the same as (1), only that pupils in turn do the work of the teacher.
3. Same as (1) or (2) with the understanding that all those called

out stand with their backs to the class, until the word is completed, and turn around for a few seconds in the order of the letters of the word. The pupils see the letters in order and only one at a time.

4. Exactly as in (3), only instead of turning one at a time the pupils forming the word turn at once and turn again in a few seconds, the teacher indicating the time, and shortening it as the pupils advance.

5. Same as (4), but the class turns instead of the pupils forming the word. They have their backs turned to the word until it is ready.

6. Same as (5), but the teacher writes the word on the board instead of forming it with pupils.

7. Pupils change the word by sending one more letter pupil to the front.

8. Pupils change the word by sending one pupil away.

9. Pupils change the word by rearranging the pupils already in the word.

10. Pupils change the word by sending one pupil to the class and substituting another in his place. (More than one may be changed.)

11. Teacher names a word and calls on a pupil to bring out the right pupils to make the word.

12. Teacher names a word and pupils come themselves in the proper order to make the word.

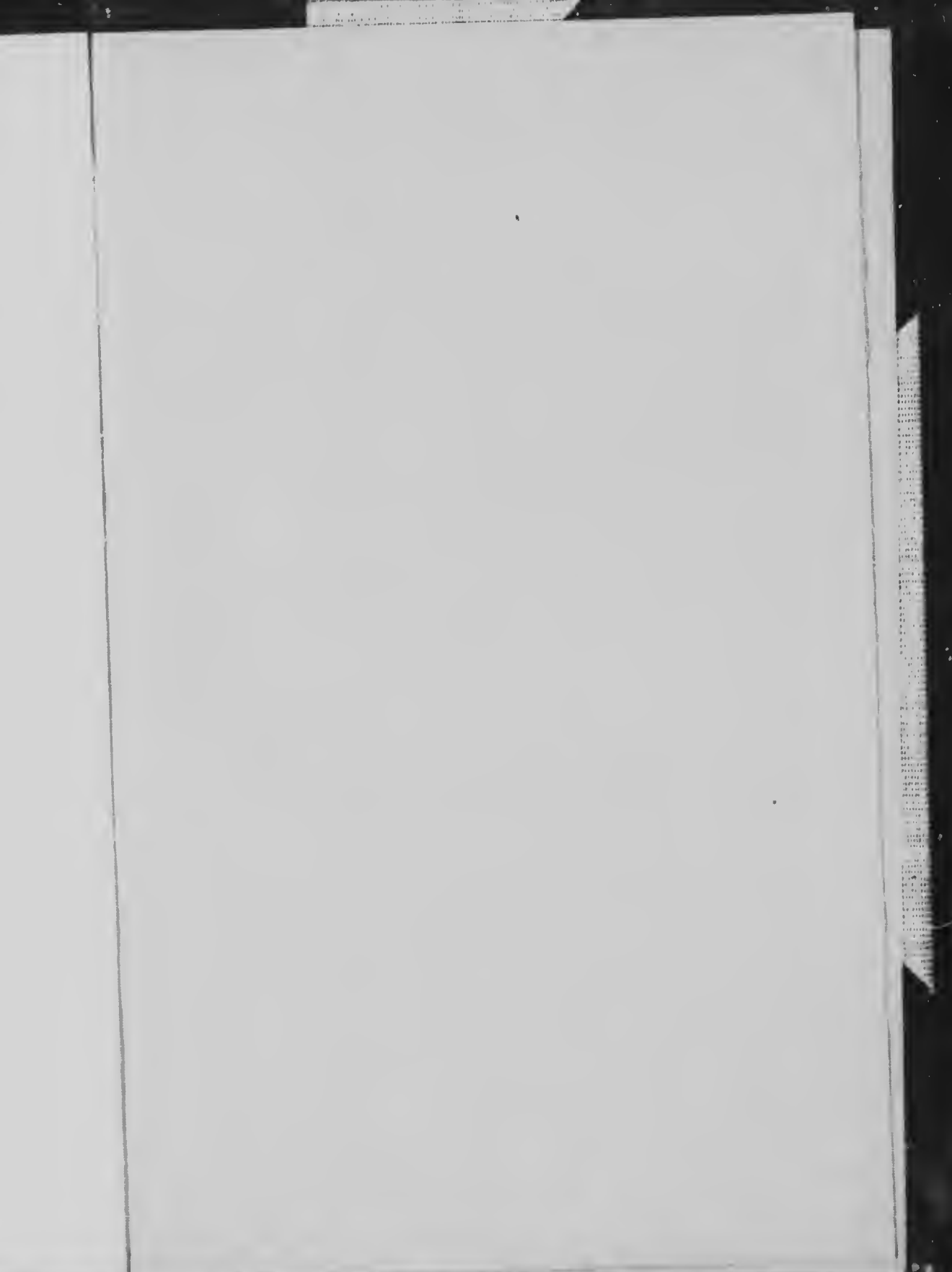
13. Two or more pupils may be given the same letter. The teacher names a word—say "mat." As soon as the teacher says "one," every child with "m" on his slate steps out from the line and turns around. At "two" those with "a" and at "three" those with "t" step out and turn round.

14. Same as (13), except that the "m" children should select the children that represent the next letter, and they in turn should choose the children who are to follow them.

"The most tactful teacher will have greatest variety in problems for her class. These games may be played with a whole class and several pupils may represent the same letter. When the teacher or the pupil who is leading names a word the pupils stand up in turn as the teacher says "one," "two," "three," etc. Pupils who fail to stand promptly when theirs is the next letter, or who stand when they should not do so, may be put out of the game. Sides may be chosen for matches, and the pupils may raise their hands or step a pace forward when they are required to represent the next letter."

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