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MAJOR PROJECTS IN ELEMENTARY SCHOOLS

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FOREWORD.

How shall a project be organized so that the subjects in the school program shall properly function and shall contribute to the effective working out of the central idea around which the project must concentrate? How shall an untrained teacher be able to formulate her subject matter in terms of projects unless she understands the function of each subject?

An attempt is made in the first chapter of this bulletin to outline the proper function of each subject "according to its relative and absolute educative value" and to indicate what the child's natural reaction to this material becomes in his educative process when it is organized in terms of projects. The second chapter deals specifically with a series of projects which have been worked out in several elementary schools according to the fundamental principles laid down in Chapter I.

But one type of project is considered in this discussion, the major project, which, in educational parlance, has come to mean a unit of study around which the work of the school shall center for a given length of time and shall include all the activities of the school during that period. Such a study creates a demand for reading, writing, language, and number, and presents many opportunities for the use of drawing, modeling, making, and sand-table building. It provides for contracts and cross connections between all the subjects of study and presents a vital, integral unit for the work of the school. The minor project deals with some lesser question which may grow out of the major project or which may be suggested in the assignment of the daily recitation. It is more individual in character than the major project and often is little more than a related problem in a subject of study.

A distinction is readily made in this connection between a project which deals with a real situation in the child's experience and the act of playing through such an experience in the schoolroom. The first is based upon the child's direct contact with some activity in his immediate environment from which he gains those impressions that are used as a basis for study and for reproduction. The play project may come to him through the medium of actual experience, but it is developed and carried on in the realm of imagination and supposition.

MAJOR PROJECTS IN ELEMENTARY SCHOOLS.[1]

Chapter I.

THE ORGANIZATION OF SUBJECT MATTER IN TERMS OF PROJECTS.

Elementary teachers hear much to-day regarding the child's interests and experiences as bases of their work. Just what does this mean, the child's experiences, and how may they become the dominating idea in elementary education? What are the child's interests and experiences? What are they before he enters school, what are they now with his added school experience increasing day by day, and what are they destined to become as we look toward the future through the next year, and the next, and for many years to come? A great educator has said: The child's home is of paramount interest to him; he is interested in the brute life about him; he loves the flowers; the passing of the seasons and the changing phases of nature affect him; pebbles and stones; the forces of nature, wind and rain and heat and cold; growth of plants in garden and field—all these come within the realm of his daily observation and experience.

These interests and experiences have been classified in the outline given below as central subjects and include science, geography, civics, history, and literature. Here within these central subjects lies our opportunity for educative material upon which to base our projects. Anything less than these is unworthy. The method of presentation is suggested by the remaining sections of the outline. Impressions are received by the child through the modes of attention: Observation, hearing language, and reading. These impressions are reproduced by him through the modes of expression: Gesture, music, making, modeling, painting, drawing, speech, and writing. Finally these impressions are made definite and real to the child through the modes of judgment: Form and number; their adequacy depends upon his ability to visualize the elements of form and proportion in his mental picture.

Organization of subject matter.

	I. Central subjects.	II. Modes of attention.	III. Modes of expression.	IV. Modes of judgment.
The child's relation to..	Science. Geography. Civics. History. Literature.	Observation. Hearing language. Reading.	Gesture. Music. Making. Modeling. Painting. Drawing. Speech. Oral reading. Writing.	Form. Number.

I. The central subjects representing the child's interests and experiences.
II. The modes of attention through which the child receives his impressions of the central subjects.
III. The modes of expression by which the child reproduces his impressions of the central subjects.
IV. The modes of judgment by which the child measures his impressions of the central subjects.

[1] Elementary schools in this bulletin refer to the first six grades.

Here we have concentration and the unification of thought and expression. "Each subject, means, mode, and method finds its absolute and relative educational value, its definite place in conditions for self-activity and self-effort." No teacher can wander far afield with a classification of this kind in her mind when she essays to organize her subject matter into units of study and to use the project method as a basis of her work.

But unless she does build around a central subject, unless she knows that silent reading is a mode of attention and not a subject of study, unless she realizes that oral reading is a form of speech, a mode of expression, not a subject of study; unless, in other words, her subject matter functions "according to its relative and absolute educative values," she will find her project falling about her ears like a house of cards and she will return to the beaten paths with which she is familiar and will continue to hinder the spontaneous growth of the child by misusing and perverting the educative function of the subjects in her daily program.

Here, then, is a measure by which to gauge the educative process and upon which to build our schoolroom procedure. Great minds have contributed to this organization of subject matter—Herbart, Froebel, our own educational reformer, Col. Parker, and many others. It remained for Col. Parker to take the best from this system of educational philosophy and to found a school in which the theory might be tried and tested by actual schoolroom practice. For 20 years it has been successfully practiced in many schools in this country. Just now it is receiving a new impetus, and fortunate are the children who are entering school next year that recognition is more and more being given to the greatest educational movement of our times. That it requires study and preparation on the part of the teacher and that its limits are expressed by her education, training, and a professional perspicuity there is no doubt. If we wish to carry on this great movement, we must understand the child's attitude toward the life about him and in what particular way the environment that surrounds him can be made to function in his education.

THE FUNCTION OF SUBJECT MATTER "ACCORDING TO ITS RELATIVE AND ABSOLUTE EDUCATIVE VALUE"—SOURCES OF IMPRESSION.

I. Central Subjects.

SCIENCE, GEOGRAPHY, CIVICS, HISTORY, AND LITERATURE.

SCIENCE.

Field excursions and experiments.—The lesson in science usually takes the form of nature observations in the early grades and is developed from the child's unconscious observation out of school. Later these lessons are based upon his more conscious study of nature on a field trip or from specimens brought into school rooms for study or enjoyment. All of the interests and experiences which these contacts arouse should be considered by the teacher in her search for centers of study and for themes upon which to base her projects.

Excursions in the field and experiments in the schoolroom should form a large part of the plan for these lessons. The experiment often supplements the experience gained in the field and clarifies the somewhat vague and in-

definite impressions which are apt to result from an excursion. It coordinates and conserves the experience and helps the pupil to form a definite, tangible premise upon which to build a future inference or conclusion. The value of a field excursion may be increased, in the middle grades particularly, if the class is prepared for a definite line of observation, with the teacher close at hand to direct and participate in the investigations. Some of this period, undoubtedly, should be free for the exercise of individual and group interests, perhaps wholly unrelated to the class experience, and these may develop later into valuable material upon which to base an individual or a group project.

The garden.—In the making of a garden there are many opportunities for lessons in science and geography. It opens a way for field lessons in which to collect specimens of soils and to conduct a series of experiments which shall determine their power to retain moisture and their capillarity, leading out to the practical questions of irrigation and dry farming. It calls for visits to different garden plots in the vicinity, on high ground and on lower levels, and for walks in the country where systems of drainage have redeemed the swampy land and prepared it for cultivation.

Then there are kindred subjects related to the garden. How many and how vital they are: Bird boxes in the garden; What to do with the English sparrow; How is this little savage of bird life responsible for the depredations of the Tussock moth? The household cat and his relation to the fruit trees in the garden; The economic value of the American toad; and so on through many phases of these natural phenomena.

Pertinent questions, logical reasoning, enthusiastic responses, cooperation, and sympathy are some of the values of these lessons. Much more than garden making and plant study are developed. Ideals of usefulness, of thrift, and of industry are unconsciously absorbed which shall fix irrevocably a higher standard of living.

Mechanics.—In the middle grades the problems of construction begin to assume an interest in the child's life. Out of these interests many individual projects may be developed with the aid of materials like the Erector models, construction blocks, and Meccano parts to supplement the observations made during the field lessons. Automobile construction is close to the child's experience, and how to change a tire is one of the most practical problems he can master in these days of horseless carriages. Farm machinery, the tractor, harvester, reaper, and binder; the building of houses, with their problems of heating, lighting, plumbing, and ventilation, offer subjects of absorbing interest in mechanics, electrical appliances, and sanitation to children in these grades. The bridge which the child crosses on his way to school, the railroad track under the bridge, and the engine passing and repassing at his feet stimulate him to inquiry, and research, and experimentation.

Lessons on food and clothing, which include subjects like cotton and wool, wheat and milk, lead out into a study of the problems involved in the manufacture of textiles, and the principals of mechanics which are utilized in the steam-roller processes in our large flouring mills. The study of farm animals and agriculture begun in the lower grades logically follow. Milk offers a wide field of study through lessons in modern methods of dairying, the construction of silos and dairy barns, of motor churns, cream separators, and cheese presses. The sterilization of dairy utensils and the process of milk pasteurization, as lessons in chemistry, bear the closest relation to the child's health and well-being, and may be woven into our plans for projects as we look for subjects in science which hold an absorbing interest for the child.

GEOGRAPHY.

The child's immediate environment is the right material for his projects in early geography lessons. This subject goes hand in hand with science and shares with it the opportunity for study which every field trip and every excursion provides. Each locality possesses some interest which offers possibilities to the teacher for organizing her project. It may be a river which opens up a wide choice of related subjects, a mountain or a plain, a product of especial value to the community as an article of commerce or of manufacture, or a landmark which holds some special significance in local history.

Maps are wholly outside the question in this early work, and are, at best, but diagrams upon which to base a conception of size and shape and location. They have little to do with the real subject and often produce an erroneous impression which may cling to the child through all his later life. He should learn to know his town through his contact with its life. He should be led to think of his State as he thinks of a beautiful landscape, situated in the East or West, the North or South, with a wonderful diversity of mountain or plain, rich in natural products, watered by many rivers, abounding in fertile farms and prosperous cities. This should be his ultimate impression, his own State merging into one continuous panorama, without artificial barriers and boundaries of line and color, which, alas, he all too often remembers from the maps he sees upon the blackboard or in his textbook.

CIVICS.

Reports of the child's observations of his own house, its color, size, and general appearance; of the different rooms in his house, the furniture in each, and its specific purpose offer excellent material for these units of study.

The family life which surrounds the child, the different members of the family, and their relation to him are close to his interest and experience. Discussions in the schoolroom of the child's home activities, setting the table, washing and wiping the dishes, making the beds, and the best ways and the necessity for performing these homely tasks will lift them above the plane of drudgery they so often occupy in the child's mind, and will afford, at the same time, a most opportune occasion for early lessons in civics.

Later his interests extend out into the town in which he lives and his participation in its life and history: The material construction, location, plan, streets, and buildings; the personal needs, food, shelter, and clothing; the professional contacts, the employer, the teacher, the doctor, and the preacher; the social experiences, recreation and intercourse, and the ethical significance of the government of the town. Finally, it leads him out into the world of foreign peoples with their typical manners and customs, and through comparisons and contrasts in this study he forms his ultimate standards.

Throughout this series of problems the civic interest and the history interest are coincident, they merge and blend, they sustain and supplement each the other.

HISTORY.

Back of every project in history should lie our ultimate purpose—to instill in the minds of our pupils the great principles of democracy, upon which our Republic rests. The detailed study of manners and customs in the lives of primitive peoples seems to be the logical starting point for history lessons in the primary grades. Our early settlements in portions of the New World offer so

the children a richness of material for history stories which no other record of daring and adventure can surpass.

American history is filled with material for lessons in Americanism and the principles of free government. It possesses, more than most, the dramatic and picturesque background so appealing to little children. Its stories of primitive life depicted in the early chronicles hold a compelling interest for primary pupils. Extreme contrasts afford a most artistic element in these narratives—Puritan asceticism as contrasted with Indian barbarism, the kerchief and cap with the feathered headdress and war paint; log cabin with wigwam, and all the homely virtues intensified in a land of wanton practices. Our heroes of exploration, the swashbuckler and priest, French commandant and emigré, fur trader and Spanish grandee, fill the pages of our history with tales of fortitude and courage. Washington and Lincoln, a home of wealth and culture, and a home of poverty and privation, each contributing to the Nation's greatest need, one a "father" and one a "savior" of his country—where in the annals of another country might we find a record so convincing with which to teach the principles of our democracy?

We shall be emphasizing pageants, plays, and festivals during the coming years as a part of our effort to imbue our children with the spirit of democracy. These will abound in symbolism of national ideals, with national events and national progress. We shall learn to sing our national hymns, to recite our national odes, and to salute our flag with a reverent and a contrite heart, realizing that we, as elementary-school teachers, must sow the seed of patriotism in the early years and trust to those beyond us in the work to sustain and encourage its growth.

LITERATURE.

Literature illustrates and beautifies the subjects of study. It is like an accompaniment played upon an instrument during an interpretative recital. For the children it interprets the various phases of nature and enlivens the facts of history. It should be woven into every project as a complement to the study of the central subjects, unless, indeed, it becomes itself a unit of study.

The myth is the beginning of science and history and is closely allied to the early study of those subjects. The cumulative and repetition stories in folklore are the beginning of civics and introduce these early lessons in human relationships through word pictures of concrete and vivid situations. The fable is the beginning of ethics and subtly paves the way for training in right conduct. These stories offer the best opportunities for studies in literature. They carry the child outside himself into a world of imagination and fancy. They build upon the known element in his everyday experience and idealize and enlarge those experiences.

American literature abounds in choicest specimens of English composition which bear a message of national import. We are unusually fortunate in our poets who have contributed largely to the sum of American literature for children. The modern fairy tale is not so good, and should not be used as a substitute for the old classic story which teaches the truth in a better manner. Care should be taken to apply the universal truth embedded in the old Greek and Norse mythology to the child's present-day environment, else the intrinsic value of a study of this literature will be lost.

Tool subjects and content subjects.—Literature and language are so closely associated in the primary grades that the consideration of one involves a discussion of the other. They differ widely in their function, however, for

language is a tool subject, a mode of expression, while literature is a content subject, which in the form of story-hearing by the pupil becomes a mode of attention.

The telling of a story as a unit or a single piece of literature involves the organization of the story into parts which must follow each other in logical sequence, the play of the imagination over the details of the story, the clear visualization of the setting of the story, and the action which takes place, and the training of the body to respond, naturally and simply, to the emotions which the story may arouse.

Later, readings in literature should be made for the gratification they afford and for the study of human life which they offer, without thought of analysis or dissertation. "Everywhere have I sought peace," says the blessed Thomas à Kempis, "and have found it nowhere, save in a corner with a book," which most aptly expresses what our ultimate use of literature should become.

II. Modes of Attention.

OBSERVATION, HEARING LANGUAGE, SILENT READING.

OBSERVATION.

Without doubt, observation plays the most important part in our acts of attention. Emphasis has already been placed on observation as a means of study in science and geography. It is the primitive, universal mode and should be cultivated in early grades to the extreme of its possibilities.

His training in a close and accurate observation cultivates the child's visual memory, upon which depends all the mental pictures which he creates in the realm of fancy and imagination. This is the fundamental principle upon which the child's education depends: His ability to form vivid mental pictures from his acts of attention and his ability to create out of these other images in the field of constructive imagination.

The teacher's task is not only to present the necessary stimuli, but to train the children under her care in the cultivation of mental imagery. The modes of expression which are given in the next few pages are important means in this training.

HEARING LANGUAGE.

Hearing language is a more difficult mode of attention to master, since it deals with symbols and the child loses the direct contact he enjoys in observation. But a trained ear is quite as important as a trained eye. This is true in language training, because it is through the sounds of language that the interpretation of meanings are secured. Many critics believe that silent reading depends upon the auditory image for its functioning. All authorities agree that the ear is the important organ to be considered in teaching little children to speak, to read, and write. "Address the ear principally," Gouin exhorts the teacher of language, "afterwards take as auxiliaries the eye and hand in reading and writing." Huey agrees that "the ear, and not the eye, is the arbiter of speech; the mouth, not the pen, its greatest instrument."

Naturally the story is the usual medium through which to reach and hold the child's attention in the primary grades. Later narrative, exposition, and oral reading play a large part in the act of hearing language. Caution is needed here against the use of oral reading as an act of attention in the lower grades. Children receive very little of content through this subject at this time. Their

acts of attention in oral reading usually are focussed on forms and symbols, and their souls are harassed and troubled by difficulties present and unknown dangers to come.

Skill in telling stories to little children should be as much a part of the teacher's equipment as a knowledge of good literature and discrimination in its selection should be. All the art of story telling which she covets for her pupils the teacher should herself possess a hundredfold. Nor does her responsibility end with the telling of the story, for a very definite consideration of its movement from one point of action to another will assist the children to organize its parts into a logical, literary whole, and will train them in that priceless accomplishment—the ability to form vivid images from hearing word pictures.

SILENT READING.

Reading is the third and last mode of attention, and silent reading becomes in later grades the almost universal one in the study of the central subjects. For that reason it should occupy a larger place in the early grades curricula than is now accorded it. Upon it depends the child's power to study and read intelligently through all his later life.

It is needless to say in this connection that of all the subjects in the course of study which lose their function in the hands of the average teacher the subject of reading suffers most. In nearly all schools it is taught as a subject of study through formal drills in technique. Oral reading, which is a form of speech and whose function is expression, degenerates into exercises on the pronunciation of words. Silent reading, which is a mode of attention, is neglected in the first grades until the pupils lose their power to use it in the upper grades according to its function as a mode of attention.

How to cultivate the silent-reading habit.—A reading room for pupils in elementary grades should be set aside in every elementary-school building. It should be furnished much as the children's rooms in public libraries are furnished. Low book shelves should line the walls, filled with books of many kinds; books for tiny children still reading from the pictures in a book and too little yet for texts; shelves of children's classics chosen from Kipling's storehouse, from Carroll, Baldwin, and Scudder, from Perrault and Æsop and from Mother Goose, and just as many as possible of the beautiful readers which the schoolbook publishing houses are bringing out in de luxe editions. These should be arranged not more than 4 feet from the floor, within easy reach of every child in the school.

This withdrawing room would provide for the children an opportunity for silent reading which the ordinary overcrowded assembly rooms do not now afford. Until the children are able to read they will enjoy looking through the books and inspecting the pictures. No seat work was ever devised that can be compared, either in its appeal or in its educational value, to a number of good books conned over and enjoyed by a child in these grades. As an aid in training the child's critical sense in good language forms it has no equal.

How to stimulate interest.—The reading interests of a group of children may be utilized in various ways. The reports in class on selections read, and exchange of books between pupils, with discussions of the pictures, the story, and the characters, will pave the way to a later interest in library reading.

Library reading.—One hour each week, at least, should be spent by the primary grades in a library with their grade teacher. Picture books and reading books should be inspected by the children, questions asked and answered, and encouragement given to each child to draw out a book and take it home to read,

if possible, or to hear it read by one of the family. The library habit should be cultivated early, as soon as children are interested. This may not be feasible in schools where libraries are some distance from the school building, but even a field trip on the street car or a long walk with the library building as the objective will amply repay the effort made to reach it. The library atmosphere is unique and can be experienced only by personal visits. It is one of the best of the higher influences which touch the child and should be formed early to insure permanency.

III. Modes of Expression.

GESTURE, MUSIC, MAKING, MODELING, PAINTING, DRAWING, SPEECH, AND WRITING.

Some modes of expression are peculiarly appropriate for one subject and some for another, depending upon the type of lesson, the teacher's convenience, her class of children, and the materials she may have at hand.

To visualize, to discuss and relate, and to reproduce is the orderly sequence of reproduction in any subject; to call up the mental picture and then to describe it through the media of the various modes of expression; by oral language, graphic art, gesture, and later by written language; by whatever mode is most appropriate.

To visualize is the essential, fundamental principle upon which this training rests. "I believe that the image is the great instrument of instruction," says Dewey in his Pedagogical Creed. "What a child gets out of any subject presented to him is simply the images which he himself forms with regard to it." The teacher's part in this study is not to instruct but to help the child to form his image and to suggest and provide a suitable medium through which he may express that image.

GESTURE (INCLUDING POSING AND DRAMATIZATION).

Any form of gesture is a mode of expression and is essentially an art subject. It has to do with emotion, thought, and feeling. Grace and dignity of carriage, poise and freedom from self-consciousness are some of the finer qualities which this mode of expression develops.

Posing and dramatization.—Posing is the mode of expression which emphasizes motion and should precede the dramatization of a story. It is used most frequently to impersonate a character in some characteristic pose. Many children who have difficulty in acting can take the pose of a character. Diffident children will be able to take part in this simpler form of action.

Dramatization emphasizes action and is used in reproducing a story or an incident in history or literature which has a decided dramatic quality and is characterized by action. Much of the value of this mode of expression lies in the opportunity it affords for initiative and resourcefulness. The children should be as free as possible during this period. After a leader has been selected he should be held responsible for the presentation of the play. He should assign the different parts and instruct the characters. If his efforts fail another leader should make an attempt to organize the story into dramatic form and to present it before the school. "Hands off" should be the teacher's slogan if she desires to cultivate initiative in her pupils. A pantomime may be organized by a group of children outside the classroom, and after presentation the class may guess the name of the story that has been dramatized.

MUSIC.

Music should receive the same treatment in the primary grades as that accorded the other modes of expression—an avoidance of technique until the children are quite proficient in singing the beautiful songs prepared by our best composers of music for little children. Rote songs should accompany the lessons in science, in history, and in literature as a mode of expression. The study of symbols should be deferred until the third or fourth grades, at least. Emphasis in all grades should be placed upon music as a mode of expression rather than a subject of study.

MAKING (INCLUDING SAND-TABLE BUILDING).

There is no mode of expression more valuable than that of making. It represents the object more adequately than any other, because length, breadth, and thickness can be expressed by it and it reproduces the object in the same or similar material. It leads to a study of form, of size, and of proportion in all the dimensions. More important still, the children's interest is held by it indefinitely, and their enthusiasm as well.

Building on the sand table.—The representation of regional projects in miniature on the sand table has many educational assets and some liabilities. This treatment is used largely in primary grades to make concrete the impressions which the children are receiving in some unit of study, like the farm, the town, or the setting of a story. It has a direct bearing on the problem of visualization and helps to clarify the mental image. But the child must be led out from his models on the sand table into a sense of reality and on into the field of constructive imagination. Unless this is done his image ceases to grow and he will forever after see the tiny models on a sand table when he wishes to recall some typical setting in a history or geography lesson.

MODELING.

Clay modeling emphasizes form and substance and represents the object in bulk which may be expressed through the clay or plastocene medium. It also possesses an unusual value because a compelling motive lies back of the work. The content of the picture is in the child's mind when modeling is used as a mode of expression and not a representation of the form only.

PAINTING (INCLUDING PAINTING A LANDSCAPE).

Painting emphasizes form and color and is important as a means of cultivating the child's sense of color. Painting with water colors is a difficult mode for little children, because the wash of color must be kept within the outline of the object. If the outline is cut out before the object is painted it will not limit the stroke of the brush, and when it is finished it may be pasted on an appropriate background.

Painting a landscape.—Colored-poster effects to illustrate a story in history or literature may be prepared through this medium in the form of a landscape in water colors for the background of the picture, with the painted objects pasted in their appropriate places on the picture. The wash of color for the background should be made with a sideward stroke of the brush from right to left, the upper half of the picture in blue for the sky and the lower half in an appropriate color for the different seasons of the year—green for the spring and summer landscape, brown for the fall, and dull gray for the winter. Hills or level country are represented by the sky line, which is drawn in lightly with a pencil before the painting is done. Trees and other painted objects may be pasted into the picture to represent any type of landscape that is desired.

DRAWING (INCLUDING BLACKBOARD DRAWING).

Outline drawing has little to recommend it as a mode of expression in the elementary schools. It requires painstaking effort on the part of the pupil and results in a hard, inflexible line which poorly represents the outline of any object.

Blackboard drawing.—Drawing on the blackboard, or chalk modeling as it is usually called, emphasizes the environment or background of the child's picture and is the best medium for the early work in drawing. If the children are encouraged to draw freely from the first day of school they will have no fear of what to an untrained teacher is a difficult task. Children draw as naturally as they make a gesture and much more naturally than they talk when the reproduction of a story is involved. "I can not tell it, but I can draw it," is often said by children who have had this training, or whose natural aptitude for drawing has been encouraged and developed.

Chalk modeling at the board consists of long, sweeping, downward strokes with the side of the chalk for the vertical objects in a landscape, like the trunks of trees; side strokes from left to right for rolling country; and slanting strokes for hills and mountains—a type of reproduction which is extremely simple for little children. The drawings are crude at first, but they gradually assume correctness of form and proportion under the kindly guidance of the teacher. This method also gives full play to the free arm movement so essential to good penmanship in later grades and is an invaluable training in graphic expression.

Cutting.—Cutting the outline with paper and shears is a more satisfactory medium than drawing with a pencil, in early work especially. It brings the outline to the child in a tangible form, so that the eye is reenforced by the sense of touch when the outline is cut away from its background. The medium seems to be a simpler one than pencil and paper so far as the child's control is concerned. Its chief criticism lies in the fact that the child's training in this mode of expression does not carry over into his later work in art and expression.

SPEECH.

The project offers unlimited opportunity and material for the exercise of oral language. Every lesson in science and geography, in civics, history, and literature is approached through this mode of expression. Conversations, questions, and discussions stimulate the children's interest in these subjects and provide occasion for the use of oral language.

Upon this mode of expression all other modes are based. The other language subjects—reading, writing, spelling, and phonics—are closely connected with it, and the appropriate correlation which exists between oral language and the manual arts as modes of expression should be emphasized by the teacher as she trains her pupils in their use.

Oral reading lessons.—Development lessons in written language and oral reading should grow out of each lesson which is given in the subjects of study. There is no better way of teaching reading than this. The teacher stands before her class, chalk in hand, near the blackboard, and as the pupils formulate their sentences she writes them on the board, later to be typed and bound into reading books.

This exercise offers opportunity for discussions of good language forms, of logical sequence in events, and of clear and concise statements. Two elements should be in the teacher's mind—a limited vocabulary and the need of

much repetition. This step from oral language to written forms is made without difficulty in these exercises because the sentences are of the children's authorship and are based upon their own experiences.

Auditorium periods.—The lack of opportunity for oral language is the most noticeable defect in the elementary-school program. Individual pupils in the first grades throughout the country speak less than 100 words during a five-hour session of school, including all their responses in the recitation periods of the fundamental subjects. They talk on an average less than half a minute during the school day; and this opportunity is not appreciably greater in the middle grades.

It is one of the best signs of the times that get-together exercises are becoming more and more a feature in the daily school program. Here is a compelling motive for exercises in oral expression and those modes most closely related to it. Once a week at least the elementary school should come together for an hour of music and literary exercises, and for reports on civic interests and nature observations. The Francis W. Parker School in its Yearbook on Morning Exercises, sums up the values of this period in its school in the following words:

> It is evident that the exercises grew out of the daily work of the school or out of the interests of the children in some large, absorbing outside question. The subject is sometimes science, the telling or illustrating of nature observations; the story of some visit to the farm, the art gallery, or workshop; history, current events; the massing of the literature and music of some special subject or special day; the telling of stories that delight the children's hearts; or the discussion of some problem of vital significance in the community school. Therefore the exercises instead of interfering with the school work, emphasize, reinforce, and vitalize it; give it purpose and form and furnish the best test of the children's growth and power to think and of their skill in expression.

A distinct motive lies behind the use of oral language as a mode of expression in the auditorium period. Artificial and unnatural attitudes toward this exercise are fostered if the child is asked to stand before the class and repeat, time after time, a story with which the class is already familiar. He is being trained and he is conscious of it and usually resents it; at the least it tends to make him self-conscious and robs the exercise of all spontaneity and pleasure.

WRITING.

Writing, a mode of expression.—Writing is not a subject of study. It is a mode of expression and should be taught as such. The child should spring to the board under the impulse of an idea and attempt to express that idea in writing. It may be only an isolated word that is emphasized in the reading lesson, it may be a phrase or a short sentence, and the writing of it will be crude at first and scarcely legible, but in a few days the words shape themselves into readable form, and the child has mastered the first step in written language.

The first demand, usually, that meets the child when he enters school is to write his name on the board to mark his place, at his seat to mark his papers, on his material, boxes of paints and crayons, of pencils, of words and letters to be used in reading, that he may distinguish them as his own. As he becomes more proficient he labels this material and the furniture and apparatus which he uses. In scores kept in the games he plays, in street signs in his playtown, or names and prices of foods in his playstore, in numberless activities these demands grow from day to day and are the real incentive for teaching him to write, that writing may become a useful tool to assist him in his work, rather than a long deferred accomplishment gained through weeks and months of formal drills in penmanship.

IV. Modes of Judgment.

FORM AND NUMBER.

Form and color.—A significant feature of the Binet tests, as they are formulated and used in the first grade in the Detroit public schools, is the emphasis which is placed upon judgment of form as a criterion of the child's mental ability. "Which is the prettiest?" is asked regarding the pictures in outline drawing of three birds—the owl, canary, and parrot. Three horses, three dogs, and three fishes are presented in the same way. "Show me another window like this, make the second picture look like this; what is lacking in this picture?" are questions in this test which are evidence of the high value placed upon the child's critical faculty in the matter of form as a measure of his intelligence.

Color is so closely allied to form that one is never absent from the other. For that reason color should receive a greater emphasis than is now given it in early education. So many black and white prints are used to enhance the pupil's mental picture, so many descriptions are given him which are devoid of the color element, and he is so often allowed to reproduce an impression filled with color through a neutral medium, that his image must become a dull and drab affair in our efforts to educate him.

Much emphasis is purposely placed upon the color feature in the projects reported in this bulletin because of its paramount importance as an attribute of form in the training of a child's acts of judgment. Its esthetic value is immeasurable. A beautiful landscape or a tiny flower fills the child's soul with ecstacy. Often the blend of color is all the child sees in his nature observations, while the appreciation of graceful line comes to him later. Consciously or unconsciously the color which surrounds him has its subtle effect upon his character and should be given a large place in the teacher's plans for her projects.

Number.—Number includes size and proportion as elements in the child's mental image, and his judgment regarding these should be carefully trained from the earliest days of school.

The use of number should be emphasized and its relation to other subjects developed. The child should build up within his consciousness a number sense by using it as a unit of measurement. The length of inch and foot and yard should become familiar to him. He should know the size of pint and quart and gallon, and be able to roughly estimate the difference in weight between pounds and ounces. His judgment of distances, of yards and rods and miles, should be trained to approximate accuracy. He should use his hands and feet in verifying his judgment, measuring with tape and ruler and pacing off the greater distances. He should be able to read a thermometer and tell the time of day on the clock face. The days of the week, the months in a year, and the ever-changing seasons should enter into his understanding. Provision for this training in the judgment of size and proportion, of length and breadth, and thickness, of weight and volume, of degrees in heat and cold, of duration of time, must be made in our organization of projects if we wish the subject of number to function properly.

Chapter II.

A SERIES OF PROJECTS IN CIVICS, HISTORY, AND LITERATURE.

INTRODUCTION.

The projects which are reported in this bulletin have been worked out in every instance with the participation of the author. They have a many-sided value for the teachers and pupils in the elementary grades. Projects of this kind have become a power in ethical training; they motivate the work of the school along the line of altruism, and unify the interests and vitalize the activities within the schoolroom wherever they are used. It would be impossible in recitations of this kind to "separate the information lessons from their social bearings," and the "acquisition of modes of skill from their relation to the social uses to which they may be put."

Something more than educational conventions should interest us as elementary school teachers. Something more than the three R's should be required of us. Accumulation of information? Yes, but closely connected with the activities of life. Acquisition of the modes of skill? Yes, but with the realization of their social uses. Broader than the schoolroom and wider than the schoolyard must be our platform. It must include the town and the country, the home, the shop, and the store, and all that makes up the child's environment.

REORGANIZATION OF WORK IN A MILL VILLAGE SCHOOL INTO A SERIES OF PROJECTS.

One of the most recent studies of community life in the project form is that reported from the school in a cotton-mill village in a southern State. Every grade in the school had some part in this study of home environment. Each child contributed his quota to the general fund of interest and experience which formed a basis for this study and acquired proficiency in the expression of some phase of it.

A Survey of the Field.

The month of April in North Carolina is a season long to be remembered by a visitor from the Northern States. Especially is this true of one of the model mill villages there. The woods beyond the village are showing a profusion of coloring not found in many localities. From the faintest green of the early leaf to the darkest bough of the pine tree they stretch away before us in every shade of blue and yellow, while underneath the branches the snow-white blossoms of the dogwood gleam through the shadows, and the purple Judas tree adds a brilliant dash of crimson to the panorama of the springtime.

In the foreground of the picture lies the village. Its orderly rows of houses, in gray and brown and ocher, flank the broad, white streets with their concrete curbstones. At one end of the principal street stands the church, and near it

are grouped the community store, the teachers' cottage, and the two little red brick schoolhouses, giving a pleasing contrast to the neutral tone of the cottages.

At the other end of this street stretches the long, red cotton mill, the center and motive of all the activities of this community. Here the skillful men and women and the busy boys and girls of the village work through the days and nights to keep the flying shuttles and the whirling spindles in motion.

Out beyond the mill, on the edge of the woods, is the dairy, with its stalls for the cows, its milking room, cooling and bottling room, and cleansing and airing apparatus for sterilizing the utensils. Here is the dairy yard, drained and tiled, with a concrete drinking basin, a pasture sown to grass for the summer feeding, and all the latest contrivances used to safeguard the milk supply of the community.

Not far away the piggery has just been constructed in the form of a hollow square with pens opening on the outside for the food supply, and on the inside to allow access to the court, which is also drained and tiled like the dairy yard and supplied with a concrete wallow in addition to its drinking basin. Nearly every family in the community is represented in the piggery. The garbage from the table of the household is collected and fed to the family pig in the piggery, and returns after a few months in the form of pork, ham, and bacon.

The outlying fields have been plowed and fertilized and cultivated, and here the community gardens will be planted, while at the rear of every bungalow a garden plot is ready for the sowing of vegetable seeds and the planting of sets from the community hothouse.

Just outside the windows of the schoolroom, where the children are busy with their books, the hothouse stands, filled with boxes of sprouting seeds, and in the yard adjoining long rows of cold frames display their beds of tiny plants all ready for transplanting to the neighboring gardens.

In the basement of the school is the gardener's office, supplied with seeds of every variety and tools of every description for planting and cultivating a garden.

Across the road from the school workmen are draining one of the village lots, preparing it for the school garden. A small brick catch basin with an iron grill-work cover receives the water and insures the best of drainage conditions. The land has been plowed and harrowed and made ready for the children. Garden walks, 3 feet wide, cross and recross this open lot and divide it into small, rectangular beds which will be apportioned to the pupils in the school for their individual care and cultivation.

The child's relation to this environment.—Many times a day the children in this community pass and repass the gardener's office, the cold frames, and the hothouse. They see the men at work in the fields getting ready for the spring planting and nearer by the preparation for their own school garden.

They visit the piggery and feed their own little pig, who puts his wiggling snout through the opening in his pen and incessantly squeals for more.

They loiter by the dairy and watch the cows standing all day in the dairy yard, chewing their cuds, and waiting patiently for their feeding time. They can tell you that the small dun-colored Swiss gives 6 gallons of milk per day; that the two deer-eyed Jerseys are a little short on milk but long on cream and butter; and that the Alderneys are to be replaced by the Ayrshires.

They carry dinners back and forth from their homes to the mill, and many of them have already become familiar with the tasks which will fall to their lot when they enter into their apprenticeship there.

They understand the full significance of the late war in its effect on the output of the mill. From their standpoint a war contract means shorter hours in the mill and higher wages. It means additional luxuries for all the family, better clothes and food and longer week-end holidays.

They are already familiar with the processes involved in the making of cotton cloth. They have seen the bales of cotton coming into the mill, the cleaning, the combing, the lapping processes through which the cotton fiber passes on its way to the spinning room.

They have seen their fathers and mothers, older sisters and brothers mending threads, oiling machines, turning on and off the electric power which controls the work of the mill.

They have spent many a holiday in the woods, and have rejoiced, howbeit subconsciously, in all the beauty and charm and fascination which nature holds for most of us.

They watch the landscape gardener make a clearing in the woods for the dairyman's cottage. They see his men felling trees and pulling stumps in the latest and most approved method. And when the stump holes fill with water and the mosquito larvæ appear they help to pour on the oil that shall exterminate this pest and insure to the people of the village a summer of peace and comfort.

They have discovered that the gardener does not use the saplings in his nursery when he plants the shade trees in the superintendent's dooryard. He brings them from the forest, fully grown, and measuring 20 feet from limb to limb, and here they rise, in a single day, giving the same profusion of leaf and shade to this household that is enjoyed by those who have waited 20 years for trees to reach maturity.

Need of the school to consider this environment.—All these activities of the child himself and the people around him make up the sum of his existence. They are his world, his life, and his immediate interest, and should find some place in his school work.

The miracle of spring takes place under his very eyes and becomes one of his most cherished experiences. Pure milk supply is a most vital subject, involving as it does the broader subjects of nutrition, sanitation, and the conserving of food. The story of cotton, its connection with the progress of the world in inventions and manufactures; its economic bearing upon the history of the world's commerce, and especially upon the social and civic life of the people of North Carolina; its vital relation to the everyday life of the children in this mill village community—these interests create an unusual opportunity for the development of projects, both in the course of study and in the daily recitation.

The use of electricity, where it is generated, and how it is carried long distances, enabling the manufacturer to establish his factory in out-of-the-way places far removed from the power that controls the machinery, is a subject of the utmost importance to all the people connected with a cotton mill and should be amply discussed in their schoolrooms.

Outline of work.—As the work was finally organized, the home and its activities were used as a center of interest at the beginning of the school year. The children in the two first grades began by making observations of their own homes and discussing with the teacher how they were built and how furnished. Then each child made a booklet, putting a picture of a house on the cover. Each week the pupils planned the suitable furniture for a room in the house. From catalogues and magazines they cut and arranged furniture for a living

room, bedroom, dining room, and kitchen. A study of the family life of the home grew out of this study of the house and included many lessons in civics.

Reading and language lessons were developed. The sentences were formulated by the children during the reading exercise and were written on the blackboard by the teacher, later to be typed and bound into small reading books which contained eventually all the reading material which this project included.

Early drawing lessons on the blackboard trained in flexibility and control, and led up to the first lessons in penmanship. Outlines of houses and flat drawings of furniture afforded excellent models for this work.

In language periods the activities of the home were posed and dramatized and many lessons in social etiquette were inculcated, since these children had the habit of opening frontdoors and of wandering at will through any house in the village. The story hour was filled with selections which have a peculiar charm for children, on account of their repetitive quality the Three Pigs and Their Houses and The House That Jack Built being especially appropriate.

The second grade furnished a house and dressed a set of dolls to live in it. The third grade watched the building of a house, and as the teacher photographed from day to day with her camera the progress of the building the pupils made blue prints for a little brochure on house building. The fourth grade in this school made a special study of the community grocery store. They brought small samples of condiments from home and hung them in bottles on a chart, reporting from time to time on the source and manufacture of these products. The fifth grade made a study of the village with reading and language lessons bearing upon the activities of the town, the mill, the Y. M. C. A., which was its social center, the church and school, the community dairy, piggery, and the community gardens. Booklets were also made in this grade and blue prints inserted of different views of "our village." Seventh and eighth grade pupils carried this study of local environment out into a larger study of American cities, how they were founded, their plan, location, governments, etc.

Underlying this framework of civic interest ran a study of cotton from seed to loom apportioned among the different grades, which included numerous lessons in agriculture, industrial science, and nature study.

Here was a line of work especially adapted to each grade of the school in separate units and yet with relationships established between the different grades and a line of continuity running through from grade to grade which held the whole plan together and sustained its logical sequence from the beginning to the end.

I. PROJECTS IN A MILL VILLAGE SCHOOL.

THE HOUSE PROJECT, GRADES I AND II.

I. *History and geography.*—Homes in other times—Hiawatha's Pocahontas', Pilgrim's, Washington's, Lee's, Jefferson's, Lincoln's.

II. *Nature study.*—Homes of birds and insects—the robin, spider, snail, turtle, aunt, and bee. Homes of animals—the squirrel, rabbit, beaver, and bear.

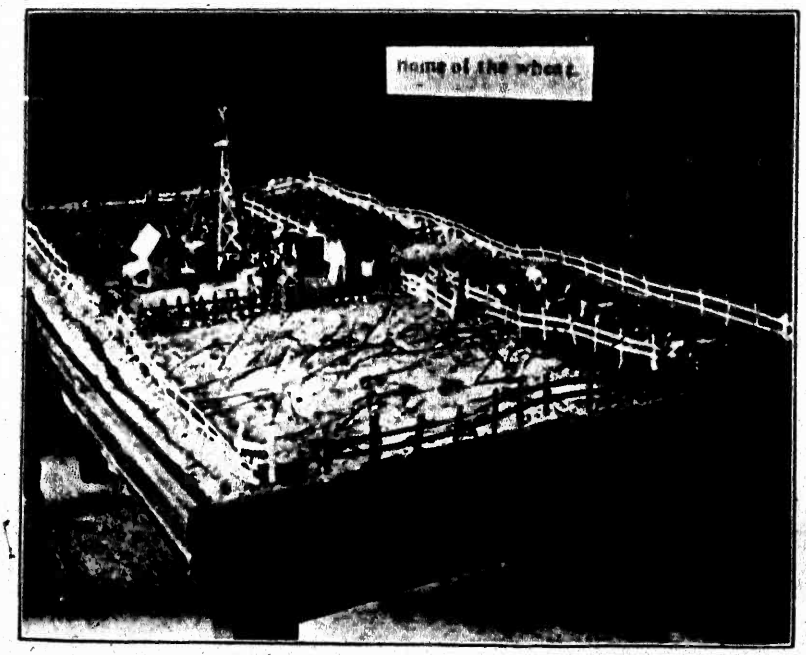
III. *Literature.*—Stories—How the Sheep and Pig Set Up House; The Three Little Pigs. Poems—Foreign Children—R. L. Stevenson. Songs—There's No Place Like Home. Songs and games—London Bridge Is Falling Down.

IV. *Art.*—The Swallows—Laux. Ann Hathaway's cottage.

PLYMOUTH PROJECT: PILGRIMS GOING TO CHURCH.

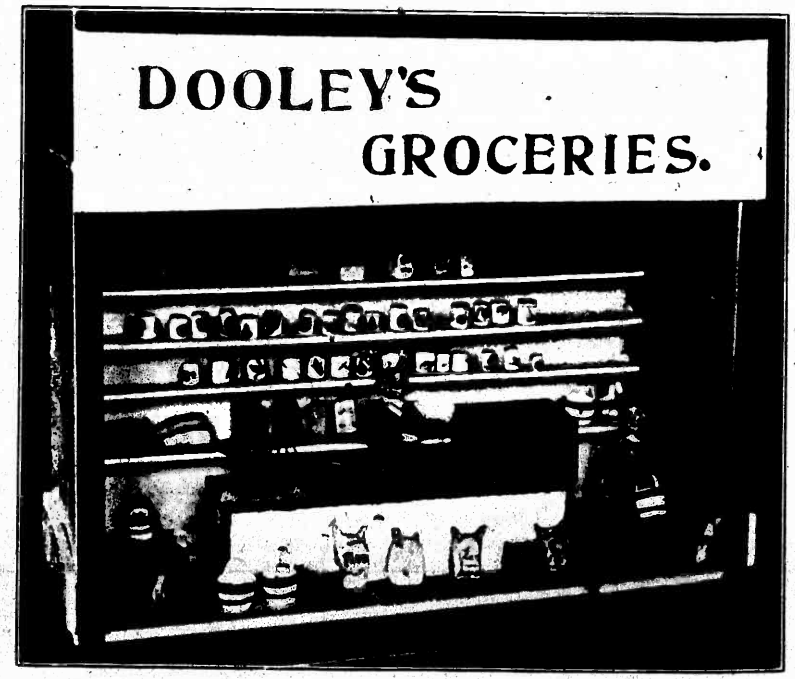
PLYMOUTH PROJECT: SMOKING THE PEACE PIPE.

A. PLYMOUTH PROJECT: THE LANDING OF THE PILGRIMS



B. BUILDING A FARM ON THE SAND TABLE.

A. KNEADING BREAD—FIRST AND SECOND GRADES.



B. MAKING A GROCERY STORE: A PROJECT IN SLOYD AND NUMBER.

V. *Language.*—Projects in modes of expression—telling, drawing, picture-book making, reading, writing of units in these projects.

1. Telling—informal conversations between teacher and pupils; story-telling; reciting poems; reports on home work.
2. Making—making picture books of homes in different lands; cutting and pasting pictures on sheets of paper and binding them into books.
3. Reading—lessons from the blackboard formulated by the children and typed by the older pupils for permanent use.
4. Drawing—drawing on the blackboard the different units from these projects. (Exercises in free-hand movement as a technical training in writing.)
5. Writing—early lessons in copying—titles under pictures in house book. Later lessons in composition.

THE COTTON PROJECT FOR ALL GRADES.

THE COTTON FIELD.

I. *Plowing for cotton in the South:*

1. Time and method of plowing; deep furrows, stalk cutter used before plowing, and stalks left on the field as fertilizer; other fertilizers used.
2. Plowing cotton fields in other lands; plows of long ago and now.

II. *Planting cotton in the South:*

1. Kinds of soil best suited to the growth of cotton—light, sandy, loamy soil.
2. Planting by hand and by a cotton planter—first in rows, and then thinned into hills.

III. *Cotton growing:*

1. Germination of the cotton seed.
2. Climatic conditions affecting the growth of cotton: Rain, atmosphere, frost, and heat.
3. Geographical areas for the growing of cotton: 35 degrees latitude either side of the Equator; sea-island cotton.
4. Cotton-growing in other lands: Egypt, India, South America, Russia, and China; irrigation of an Egyptian cotton field.

IV. *Cultivating the cotton plant:*

1. The principle of capillarity in the soil; dry farming as a reclamation project.
2. The use of the hoe and the spread-tooth cultivator.
3. Constant cultivation of the cotton field.

V. *The cotton flower:*

1. Parts of the flower and their use.
2. Pollenizing the flower.
3. How the seed cradle forms.
4. The boll weevil, its depredations and extermination.

VI. *Picking cotton:*

1. Picked by hand, as no successful machine has yet been invented.
2. Hands pick on an average 100 pounds per day, at 2 cents per pound.
3. Cotton is weighed in the field and credit given each picker.
4. Crude scales in use for weighing cotton.

VII. *Ginning cotton:*
1. Removing the seeds from the cotton fiber: the cotton is hauled from the fields to the gin and the seeds are removed there.
2. Eli Whitney and the cotton gin.
3. Mixing seeds in the gin leads to deterioration of species of cotton.
4. Cotton ginning on the old plantation.

VIII. *Baling cotton:*
1. Pressing the cotton into bales; a modern compress and a cotton screw in the old plantation; former reduces 500-pound bale from 3 feet to 12 inches in height.
2. Modern bale is 5 by 5 by 3 feet and weighs about 500 pounds.

THE COTTON PROJECT FOR MIDDLE GRADES.

WHERE COTTON COMES FROM.

United States.

I. The famous "Cotton Belt" (producing upland cotton): Nearly three-fourths of the world's supply of cotton is produced in the Cotton Belt of the United States, comprising the Carolinas, Georgia, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and parts of Virginia, Tennessee, and Florida.
1. The delta areas are found in the States of Mississippi and Missouri.
2. The South Atlantic areas comprise North Carolina, South Carolina, Georgia, Florida, Alabama, and parts of Virginia.
3. The intermediate areas are Tennessee, Mississippi, Arkansas, and Louisiana.
4. The southwestern division is Texas and Oklahoma.

II. The Sea Island cotton area in South Carolina, Georgia, and Florida: Sea Island cotton is grown for its unusually long and silky fiber, which is used for making fine fabrics and laces. It is used also where great strength and durability are required, as in the manufacture of cloth for the best grades of automobile tires.
1. The South Carolina areas are along the coast on the Sea Islands, the chief of which are James, Edisto, John, and Wadmalaw.
2. The inland area is confined to the counties lying along the coast of Georgia and northern Florida, a few miles inland from the shore line.

III. The Arizona-Egyptian cotton in the Salt River Valley in Arizona: Egyptian cotton until very recently has been produced commercially only in the delta and lower valley of the Nile River, in Egypt. Its most striking characteristics are length of staple combined with great strength and fineness. Other areas are—
1. The Salt River area in Arizona.
2. The Gila Valley area in Arizona.
3. The Yuma Reclamation Project.

IV. The Durango cotton in California: While Egyptian cotton can be and is successfully cultivated in the Imperial Valley, California, it is not so popular as the new Durango variety.
1. Imperial Valley area.
2. Colorado Valley area.
3. San Joaquin Valley.

THE COTTON MILL PROJECT FOR MIDDLE GRADES.

WHAT IS MADE FROM COTTON.

Southern mills.—Dimity cloth, and similar output. Output of the North Carolina mills—yarns, sheetings, print cloth and drills; about one-fourth consists of checks, ginghams, denims, and plaids, about one-twelfth of fancy goods, high-grade dress goods, and sateens.

South Carolina mills produce smaller quantity of yarns, but about three-fourths of their products are sheeting, shirting, drills and print goods, while one-sixth of their output consists of denims, ginghams, and ticking. A large proportion of fine goods is produced in North Carolina.

The product of the Georgia mills like that of North Carolina.

The product of the Alabama mills like that of South Carolina.

Improvement noted, lawns, fancy goods, and mercerized goods coming out of the South.

Through the mill.—(1) Bale of cotton enters mill—weighs 500 pounds, worth $150, measures 5 by 5 by 3 feet; (2) mixing room, mixed with other bales; (3) lapping, cleaned and formed into a lap, or bat, or roll; (4) carding, fibers straightened, lying parallel; (5) drawing, stretched and pulled out to prepare for twisting; (6) slubbing, fiber twisted and wound on bobbins; (7) roving, twisted still finer and wound on smaller bobbins; now ready for spinning.

Ring spinning; used in the South. Roving spun into warp and filling; warp runs lengthwise of the loom, and filling is carried crosswise by rapidly moving shuttles.

Cloth room; cloth carried in bolts to the cloth room and cleaned and finished. Cloth shipped away for this purpose is called converter's goods. Dimity cloth is shipped to Baltimore, Md., for bleaching and is made into men's underwear at the factories in that city.

Economic values.—Cotton fiber in 1918 valued at $1,750,000; cloth from it valued at $2,000,000,000; persons employed in production, manufacture, and commerce, 10,000,000; persons dependent upon it for food, shelter, and clothing, 50,000,000; dimity cloth increases four times in value from raw material.

Geography.—Spindles: Active cotton spindles in the United States 1914: In the cotton-growing States, 12,711,303; New England States, 17,408,372; all other States, 1,987,897.

United States ranks second in the world's spindleage: In Great Britain, 56,576,108; United States, 30,579,000; the world, 142,000,000.

North Carolina ranks second in the spindleage of the Southern States (1910): South Carolina, 3,715,894, North Carolina, 2,939,576.

Location of factories in the South: In the Piedmont—relation of power to location of mills; relation of labor to the location of the mill; relation of raw material to the location of the mill.

History.—Growth of the factory: (1) Primitive wheels and looms; (2) primitive modes of carding and spinning and weaving; (3) primitive methods of power processes—water power, steam power, electric power.

Cotton as a factor in the history of the United States (its manufacture): (1) A factor in the Civil War; (2) in the economic history of the South; (3) in the social life of the South.

Commerce.—Transportation as a factor in the manufacture of cotton in the South: (1) Good roads; (2) vehicles; (3) points of shipment, access, etc.; (4) imports and exports.

Labor.—Labor as a factor in the manufacture of cotton in the South: (1) Mill workers—Wages, hours, living conditions, educational advantages; (2) relation of price of cotton to price of manufactured article, and to the wages paid the mill worker; (3) high cost of living in relation to the mill worker.

Civics.—The mill worker as a factor in the civil life of the community: (1) What he contributes; (2) relation of the employer; (3) what he exchanges for his labor; (4) what he receives for his labor.

THE DAIRY PROJECT.

I. *Care of the cow.*—Clean milk: The milking house; washed with water from a hose before the cows are brought into be milked. (Inspect the milking house.)

The cows; brushed and combed and bags washed. (Observe milking.)

The dairyman; clean hands and clothing.

The milking utensils; pails, cans, and cloth strainers must be boiled in water every time they are used. They are aired and sunned in a screened cupboard where flies can not reach them. (Inspect utensils.)

Cooling rooms; walls lined with thin strips of cork to keep out the heat. Ice stored at the top and temperature kept at 38 degrees. (Observation.)

Bottling the milk; milk bottled in the cooling room. One dozen bottles filled at a time and covers put on before air or dirt can get into the bottles. (Observation of bottling and inspection of bottling room.)

Food for the cow: Grass in the meadow or pasture lot in the summer time; hay from the barn and a warm bran mash in the winter. (Inspect the dairy lot.) Forage, silage, and cottonseed meal. (Observation of feeding.)

Cool, fresh water to drink. (Inspect the concrete water basin.)

Weaning the calf: Calf taken from its mother: Why? When?

Teaching the calf to drink milk from a pail. (Observation and inspection of calf house.)

II. *What the cow gives us.*—Milk, cream, butter, cheese, dried beef, gelatine, leather, glue, bone buttons, hair in plaster, tallow candles, soap, fertilizer. (Detailed study of any one of these products. A collection of these products mounted on a chart in the schoolroom, made from specimens brought in by the pupils.)

III. *The child's food.*—Milk, butter, cheese. "The first food a family should buy is milk." "The last food to be dispensed with is milk." (Material for these lessons found in the bulletin on Health Education, "Diet for the Child," United States Bureau of Education.)

IV. *History and geography* (includes number lessons, and special study of North Carolina's status in dairy products; Texas fever tick.)—Cows of olden times; relation to environment; structure, covering, prehension of food defense.

2. Study of product maps from the Department of Agriculture: Where cows are raised in the United States; where creameries are built in the United States; where cheese is made in the United States.

3. The cowboy on the western plains; driving to the round-up; in a stampede; the herd at night.

4. The cow's cousins: In America, the deer and bison; in Africa, the water buffalo; in India and Japan, the buffalo.

V. *Poems, stories, songs.*—The Farmyard Song; The Cow, The Friendly Cow; The Milkmaid, Æsop; Mooley Cow.

THE PIGGERY PROJECT.

I. *Care of the pig.*—Hog wallows: A cool bath is soothing to a pig during the hot weather; it cleans the scruff from the skin and protects the pig from flies. A thin layer of crude petroleum on the top of the water will keep the pigs free from lice and other skin parasites. (Inspection of the pig wallow and observation of its use by the pigs.)

Food for the pig: Not adapted to living on corn alone, the pig needs a variety of food—corn, alfalfa, cowpea, and soy bean, with hay, wheat shorts, bran, tankage, skim milk, etc.

Pigs can be produced cheaper when pastures are used along with the grains, and in the South much cheaper than is possible in the corn belt. Clovers and alfalfa furnish better hog pastures than the nonlegumes. (Inspection of the feeding of the pigs in the piggery.)

Benefit of hog grazing; improving run-down land, fertilizing it, eating the weeds which the hogs relish, especially the common lamb's quarters and amaranths. The peanut is one of the best forage crops for hogs.

Economic value: Cotton following peanuts and grazed by hogs averaged an increase of 61.1 per cent, with an increase in value per acre of $22.81; with soy beans and chufas, $16.35 and $7.68, respectively.

In the South pork can be made more cheaply than elsewhere. Money spent for meat by Southern people would remain at home; would affect cotton, because the farmer could hold his cotton crop if he had pork to sell, one of the best supplements to cotton crop.

One hundred and twenty-five dollars invested in hogs returns a sale of from 5,000 to 8,000 pounds of live pork in a year, or from two to four times the amount of the investment.

II. *What the pig gives us.*—Food—Pork, ham, sausage, lard, headcheese; bones for chicken feed, bristles for brushes; leather. (Detailed study of any one of these products.) (A collection of these products mounted on a chart in the schoolroom made from specimens brought in by the pupils.)

III. *History and geography* (includes number lessons and special study of North Carolina's status in pork production. Hog cholera).—

1. Relation to environment—covering, prehension of food, defense.

2. Study of product maps from the Department of Agriculture. Where pigs are raised in the United States; why North Carolina does not raise more pork; hog cholera, infection and immunity. Pig in China, Holland, and India. Pig's cousin—the wild boar, the hippopotamus.

IV. *Poems, stories, songs.*—The Farmyard Song; The Guinea Pig; The Story of Circe; Roast Pig, by Charles Lamb; The Pink Pig.

THE POULTRY PROJECT.

I. *Care of fowls.*—Kind of fowls: General-purpose breeds—Plymouth Rocks, Wyandottes, or Rhode Island Reds. Egg breeds—Leghorns, Minorcas.

Size of flock: Depends upon available space and amount of table scraps. Not over 20 or 25 hens in a back-yard flock. Purchased in the fall, pullets rather than older hens so they will begin to lay before winter is over.

Housing: Satisfactory houses may be made from piano boxes, costing $2.50 each, one box to 8 or 10 hens.

The yard: Inclosed with board or wire fence.

Feeding: All table scraps, kitchen waste, etc., should be utilized; scraps of meat and left-over vegetables make excellent feed. Other waste products from the garden, such as beet tops, turnip tops, carrot tops, potato parings, onion

tops, watermelon and cantaloupe rinds, the outside leaves of cabbage, waste lettuce leaves, bread and cake crumbs.

No spoiled food should be fed, and a dry mash may be added to the table scraps.

Feed at noon or at night, or both times, on a board and see that nothing is left to spoil.

A plentiful supply of clean, fresh water must always be available.

Hatching and raising chicks: Early in the spring, before May if possible, done with hens. A few day-old chicks may be purchased and reared if setting hens are not available. Chicks should not be fed until they are 24 hours old. Then hard-boiled eggs and stale bread crumbs make the best food, the latter soaked in milk. Later feeding of grain, 2 parts wheat, 2 parts pinhead oatmeal, 1 part corn, 1 part rice, and 1 part millet seed; all grains cracked before mixing.

Preserving eggs: Packed the day they are laid, in water glass.

Economic value of fowls and eggs: Poultry converts table scraps and kitchen waste into wholesome and nutritious food in the form of eggs and meat. Each hen in her pullet year should produce 10 dozen eggs. The average size of a back-yard flock should be at least 10 hens. Thus each flock would produce in a year 100 dozen eggs, which, at 25 cents a dozen, would be worth $25.

Back-yard poultry flocks help in reducing the cost of living, and supply eggs of a quality hard to purchase.

These eggs cost very little, as the fowls are fed upon waste materials.

II. *What the fowl gives us.*—Food—eggs, chicken meat, feathers, featherbone.

III. *History and geography.*—1. Relation to environment—structure, prehension, and defense.

2. Study of product maps; where poultry is raised in the United States; relation to amount of improved land, with special reference to North Carolina; effect of lice and mites and their control.

3. The hen's cousins—the pigeon and quail.

IV. *Poems, stories, songs.*—The Clucking Hen; The Story of Henny Penny; Feed the Flocks.

II. THE PLYMOUTH PROJECT.

In the reorganization of the work of the mill-village school the daily program provided for an auditorium period which was used each day of the week by groups of children representing the different grades. Division 1 formed one group and included the kindergarten, the two first grades and the second. Division 2 comprised the two third grades and the fourth. Division 3 was made up of the fifth, sixth, seventh, and eighth. The groups met at different hours of the day for their exercises and came together once a week for a general auditorium period. The program for each group was similar in character and the general exercise partook of the best numbers from each division throughout the week. Too much can not be said in commendation of this period. It motivated the work of the school, it inspired the pupils to make their best effort to produce something which would be worthy of a place on the general program, and it welded the school together because a sympathetic understanding of the work of each grade was created by its presentation before the entire school.

The first half hour of the period was devoted to music, to chorus and solo singing, and to the learning of new songs. In the remaining 25 minutes the regular program was carried out. It was found necessary to indicate quite definitely the topic for each day in order to insure versatility and continuity in the exercise. On Monday a civic program was given, with reports on the civic interests of the village. On Tuesday experiments were made

before the pupils and activities presented, supplemented by reports of others which were being carried on by groups of pupils or by individuals in the different grades. Wednesday a literary program was rendered of readings, recitations, dramatization of stories, and posing of individual characters. On Thursday reports from papers and magazines on current events were given and items of news regarding the life of the village were reported.

An improvised auditorium was necessary because no provision had been made in the school for this activity. The village church was used until cold weather drove the children into the large gymnasium of the Young Men's Christian Association, where they were made welcome unless the room was being used by gymnastic classes. Sometimes the use of the grade room was necessary, and by sitting two in a seat closely crowded together the children carried out their program. Notwithstanding these handicaps the auditorium period proved a great success and a great incentive to the project work of the school. While many of these were minor projects, the "massing of the literature and music of some special subject or special day" suggests the development of a major project through several weeks of research and study. Such a study is represented by the story of Plymouth given in the tableau vivant form, of which the program and pictures are given here.

Every child in the school bore some part in the working out of this project. The stage setting was arranged by the boys to represent the forest background of the Plymouth picture. The costumes were planned in the classroom and made at home. All the stories that were told during the tableaux were given in the child's own words by one who had been chosen by the school to represent his classmates. "Thus," reports the principal of this enterprising school community, "our program was simply the outcome of regular classroom work and represents one of our major projects."

PROGRAM OF THE STORY OF PLYMOUTH IN TABLEAUX VIVANT.

Scene I. Landing of the Pilgrims: Reading by a girl in the seventh grade.
Boys' orchestra.
Scene II. The first wash day: Story by a girl in the third grade.
Solo: Thanksgiving song by girls in fourth grade.
Scene III. Care of the baby: Story by girl in third grade.
Solo: Lullaby.
Scene IV. John Alden and Priscilla: Reading from "The Courtship of Miles Standish."
Song: The First Thanksgiving Day: Second and third grades.
Scene V. The snake skin and the bullets. Story told by boy in the fourth grade.
Boys' orchestra.
Scene VI. Treaty with Massasoit: Story told by boy in the sixth grade.
Solo: Why Mr. Gobbler Changed his Tune, by boy in fourth grade.
Scene VII. Standish and his men find corn: Story told by boy in fourth grade.
Boys' orchestra.
Scene VIII. Calling the Pilgrims to church: Story told by boy in the eighth grade.
Scene IX. The Pilgrims going to church.
Song: Thanksgiving Day: Fifth and sixth grades.
Scene X. The first Thanksgiving Day: Story told by boy in sixth grade.
Reading: President's Thanksgiving proclamation, read by boy in eighth grade.
Song by school; America.

PLYMOUTH VILLAGE ON THE SAND TABLE AS IT APPEARED IN 1622.

The third-grade pupils in this school supplemented their study of the building activities in the village by a building project on the sand table. The town of Plymouth in 1622 was chosen because of its relation to the Thanksgiving program under way in all the grades and also because the simplicity of the project insured its success, although the pupils were without previous training in any of the modes of expression. Some retarded, over-age boys in the class were being held in school wholly through parental discipline and their whole-hearted cooperation was enlisted through their enthusiasm for this work. Recalcitrant members became eager and earnest, clumsy fingers deft and facile as they shaped with infinite care the buildings in this miniature community. Manners and customs and the characteristics of the Pilgrims and Indians were freely discussed during these activities in the schoolroom. Their hardships and fortitude and their mutual help and understanding, with something of the heritage bequeathed to us by this indomitable people, made their impression upon the boys and girls in this school. It is safe to say that more of the history of our early settlements was acquired during these periods than any amount of reading or study might have accomplished.

BUILDING THE TOWN OF PLYMOUTH ON THE SAND TABLE.

The sand was dampened and then modeled to represent the contour of the country in and around Plymouth. The seashore stretched across the length of the table about midway between front and back, curving at the right and extending along the right end of the table to meet the right-hand corner at the back. The village hill, of which we hear so much, was modeled at the middle right and connected with a chain of hills along the right end of the table. The seashore thus formed was high and rocky at the right, but low and level at the middle front. Here lay the village, within the curve of the bay and sheltered by the hills along the shore. Over it all stood the forest, with here and there the stump of a tree which had been felled by a Pilgrim father. The village street ran along the shore from the left end to the hill at the right. Between it and the sea stood the six log cabins with Governor Bradford's house, which was also used as the church, across the street in the middle of the village. The *Mayflower* rode at anchor in the bay, and the famous rock was placed midway along the shore.

Modeling the houses.—Seven log houses were made of twigs and clay which measured when finished 4 by 3 inches. A flat, thin slab of clay for the floor of the house was laid on a piece of carboard and a rectangle 4 by 3 inches was drawn on it. Twigs three-eighths of an inch in diameter were cut to measurement, and rolls of clay the same size were modeled. The houses were built up in rectangular form over the diagram on the clay floor, first a roll of clay and then a twig, 4 inches long at the sides and 3 inches wide at the ends. These were pressed together to form the walls of the house, with spaces left for a door and window. The roof was a thin slab of clay cut in the form of a rectangle the size of the floor. It was bent slightly through the middle to form the peak of the roof and was pressed carefully into place on the top of the walls. A clay chimney was modeled and placed at the back of the house. Palisades of pointed twigs were built around each house after it was placed on the sand table. These twigs were buried in the sand one-third their length and the palisade when completed stood nearly as high as the house. The fort on the hill was made like the houses. It was square in shape, with a flat

roof and loopholes around the sides near the roof, through which the muzzles of the guns were pointed.

Modeling the figures.—Pilgrims and Indians were modeled in clay and were dressed appropriately in crêpe paper. The women's dresses and men's hats and capes were made of black crêpe paper, and the women's caps, kerchiefs, and aprons of white crêpe paper. The Indians were dressed in blankets of tan-colored crêpe paper lined with red and white and brown feather headdresses, cut also of crêpe paper.

Many activities were represented by these figures, the Pilgrims busy at their tasks and the Indians hiding behind the trees watching them.

A THANKSGIVING PLAY—THE LOST PRINCE.

This little play was taken from a Thanksgiving story which appeared several years ago in St. Nicholas. It has many values. It brings the atmosphere of the first Thanksgiving time clearly before the children. It depicts the manners and customs of the Pilgrims and Indians and their friendly intercourse. It affords an opportunity for every pupil in the class to take some part in the play.

It was written by a class in the third grade during their language periods and developed unusual skill in the use of oral and written language. The picturesque costumes of the Pilgrims and Indians, the touch of romantic adventure which the episode develops, and the dramatic culmination of the movement make it a delightful piece of play acting.

Setting of the play.—Branches of trees at the back of the stage will give the forest background needed for the three acts of the play.

In the first act the gable end of a house is seen among the trees. This may be made of a light wooden framework covered with paper, with door and window showing.

The seashore in the second act may be represented by a stretch of blue cloth or canvas at the right of the stage.

The feast occupies the foreground in the third act, two long tables, one of Indians and one of Pilgrim men, with Pilgrim women serving.

THE LOST PRINCE.

CHARACTERS.

Stephen Hopkins, *a Puritan father.*
Elizabeth Hopkins, *a Puritan mother.*
Giles Hopkins, *a little Puritan boy.*
Constance Hopkins, *a little Puritan girl.*
Governor Bradford, *the governor of Plymouth.*
Massasoit, *an Indian chief.*
Wamsutta, *his little son.*
Samoset, *an Indian friend of the Puritans.*
Puritans and Indians.

Time—Thanksgiving, 1622.

ACT I.

SCENE I. *Clearing in the forest, with Puritan house in the background. Door opens and Mr. and Mrs. Hopkins come out with bread and pies in their hands. Giles and Constance follow them to the door. All are dressed in Puritan costume. Constance is wiping her eyes on her apron.*

Mr. Hopkins. Remember, children, you are to stay in the house until we come home.

Constance. Won't you please bring me some cake?

Mrs. Hopkins. If you are good children, I will bring you some of Mrs. Allerton's pound cake.

Mr. Hopkins. You must not leave the house. There may be Indians in the forest.

Giles. The Indians will be at the feast, won't they?

Mr. Hopkins. Massasoit and his men will be there, but the Narragansetts are on the warpath. They may be hiding in the forest now.

Constance. Oh, I'm afraid, mother.

Giles. Pooh! Don't be a "fraid cat," Constance. I'll take care of you.

Mr. Hopkins. Nothing can harm you if you stay within.

Mrs. Hopkins. Do as father says, and keep indoors. Good-by.

Giles and Constance. Good-by.

(Father and mother disappear in the forest and children go into the house and shut the door.)

SCENE II. *Same. Children standing at the window. Giles sees a squirrel run across the clearing in front of the house. They laugh, then open the door and come out.*

Constance. Where did it go?

Giles. It ran this way. *(Running toward the woods.)*

Constance. Let's catch it, and make a pet of it.

Giles. I'll make a cage for it.

Constance. What color was it?

Giles. It was gray, with a big bushy tail.

Constance. *(Starting toward the woods.)* Oh, there it is in that tree.

Giles. There it goes. See it run. Come on, I know I can catch it.

(The children chase the squirrel around in front of the house, until it leads them away into the forest.)

SCENE III. *The seashore. Constance kneeling and crying. Giles trying to comfort her.*

Giles. Don't cry, Constance, I can find the way.

Constance. That is what you always say, and we are farther away than ever.

Giles. No, we're not, Constance; we'll find Plymouth just around this bend. I am sure we are coming toward it.

Constance. Oh, why did I ever go out of the house!

Giles. It was that wicked squirrel. Maybe it was the devil tempting us. Governor Bradford says he can change into anything.

Constance. He did it just to try us. Oh, what will father and mother say?

Giles. Never mind, Constance, let's go on. We'll never find Plymouth sitting here and crying. Let's walk on.

(Wamsutta, a young Indian boy, comes walking toward them. He sees that Constance is crying.)

Giles. Look, Constance, look. See who's coming.

Constance. *(Looking up, and then rising to her feet.)* Oh, Giles, it's an Indian. A little boy. Aren't you afraid of him?

Giles. No, I'm not. I'm as big as he is.

Wamsutta. How do, English?

Giles. How do you do? *(Constance hides behind her brother. Wamsutta begins to dance.)*

Constance. What's he doing now?

Giles. Why, he's dancing. It is an Indian feast dance. I've seen Samoset do it lots of times.

Constance. He wants to be friendly.

Giles. Yes; and I want to go home.

Constance. *(Beginning to cry again.)* Oh, Giles, shall we ever find Plymouth?

Wamsutta. *(Pointing and nodding toward the forest.)* Plymot? Plymot? Come. Go to Plymot.

Giles. Look, Constance, he is pointing and trying to say "Plymouth."

Constance. Do you think he knows where it is?

Wamsutta. *(Walking toward the forest and pointing.)* Plymot. Go Plymot. *(He leads and the children follow him into the forest.)*

ACT II.

SCENE I. *Thanksgiving Day in Plymouth. Two long tables set with food. Puritan men at one. Governor Bradford seated at the head, with Stephen Hopkins at his right. Indians at the other table, with Massasoit at the head and Samoset at his right. Puritan dames serving. Massasoit does not eat, nor speak; looks down at his plate, lost in thought.*

Governor Bradford. *(To Stephen Hopkins.)* Why is Massasoit so silent? Is he angry?

Stephen Hopkins. I do not know. He has eaten nothing.

Governor Bradford. I am afraid he is offended. He is our only friend in all this wilderness.

Stephen Hopkins. We could ill afford to lose his friendship.

Governor Bradford. The Narragansets are uprising. We shall need the protection Massasoit can give us.

Stephen Hopkins. *(To Mistress Hopkins, who is serving near them.)* Elizabeth, dost know why Massasoit is silent? Is he ill?

Mistress Hopkins. No, Stephen, I do not know. I saw he was sad and silent.

Governor Bradford. I am afraid he is angry.

Mistress Hopkins. He is thinking of something far away.

Governor Bradford. I hope he is not plotting against us.

Mistress Hopkins. Samoset will know, and he will tell us. He is our friend.

Governor Bradford. Send Samoset to me; I will ask him.

(Mistress Hopkins goes to Samoset and speaks to him quietly. Samoset rises from the table and goes to Governor Bradford.)

Governor Bradford. Hast noted Massasoit to-day, Samoset?

Samoset. Yes; he eats not, nor speaks.

Governor Bradford. Dost know the cause? Is he angry with the people of Plymouth?

Samoset. Nay, he hath great sorrow. He hath lost his only son.

Governor Bradford. Is he dead, Samoset?

Samoset. Nay, he hath been stolen. The Narragansets have taken him.

Governor Bradford. Can not Massasoit rescue him?

Samoset. He is not strong as the Narragansetts. If Massasoit make war, they kill the child.

Governor Bradford. How could they take him?

Samoset. We are away at war. They come in his wigwam and steal the child away. We come home. He is gone.

Governor Bradford. 'Tis a weighty sorrow. I have much feeling for the sad father.

Samoset. The great chief speaks not till his son come back.

Governor Bradford. Can not Massasoit rescue him?

Samoset. He is not strong like the Narragansetts. If Massasoit make war, they kill the child.

Governor Bradford. Tell your chief we sorrow with him. If he needs, we will help him.

(Mistress Hopkins passes across to the table with a plate in her hand. Constance runs out of the forest to her and buries her face in her mother's dress. Giles and Wamsutta are seen standing behind a tree.)

Constance. Oh, mother, we were lost, and could not find you anywhere.

Mistress Hopkins. Lost in the forest! How did you ever find us?

Constance. A little Indian boy showed us the way.

Mistress Hopkins. What will your father say?

Mr. Hopkins. Constance, how came you here? Where is your brother?

Constance. He is there. *(Pointing to the tree.)* Oh, mother, I am so sorry!

Mr. Hopkins. Giles, come here.

(As Giles comes toward his father, Wamsutta steps into the clearing and stands looking at Massasoit. Massasoit looks up and sees the boy. He strides over to him, lifts him up on his left arm, and raises his right hand.)

Massasoit. Joy of my life, warmth of my heart, light of my steps, sunshine of my wigwam, thou art come back to me!

III. BUILDING A FARM ON THE SAND TABLE.

A PLAY PROJECT.

The building of the farm on the sand tables is a project which has been frequently used in primary and kindergarten schools as a center of interest in the daily program. Such a study is rich in subject matter. From the art side it offers a wide field of selection. It possesses also a broad historical background and a voluminous literary content and presents numberless opportunities for the presentation of problems in nature study.

The activities of the farm are varied and suggest many projects for the primary grades. These farm problems make an especial appeal to the child because his larger interest in life lies in the matter of feeding. A close connection is easily formed between this interest in his consumption of food and the activities that produce it, and this affords most excellent material for the problem-project type of instruction.

OUTLINES ON THE FARM STUDY.

Subjects of study:

1. Agriculture: Wheat; corn; potatoes.
2. Animal life: The horse; cow; sheep; pig; hens and ducks; bees.
3. Shelters: House; barn; henhouse; windmill; pigpens; dovecote.
4. Tools: Plow; drag; scythe; hoe; rake; thrasher; ax; saw.
5. Gates and fences.
6. Vehicles: Carts; wagons.
7. Mills.

Sources of impression.

I. Nature study:
1. Agriculture: Form, cultivation, and use of wheat, corn, and potatoes.
2. Animal life: Structure, care, and use.
3. Buildings: Suitable materials.
4. Tools: Raw and manufactured materials.
5. Vehicles: Application of steam and electricity.
6. Mills. Application of steam.

II. Art:
1. Agriculture: The Gleaners; The Sowers; The Harvest Moon; The Angelus.
2. Animal life: The House Fair; The New Born Calf; The Churning; The Shepherdess; The Sheepfold; A Barnyard in Normandy; Feeding the Hens; The Orchard.
3. Shelters: Mount Vernon; Ann Hathaway's Cottage; The Woodcutter.
4. Tools: The Man With the Hoe; The Song of the Lark; Ploughing; The Haymakers; The End of the Day.
5. Vehicles: Meeting of the Ways.
6. Mills: Primitive mills.

III. History:
1. Agriculture: Cortez introduces wheat into Mexico. Pilgrims discover corn. Wild potatoes in Virginia.
2. Animal life: The horse in Mexico; Sacred cow in India; Shepherds and sheep of olden times; The wild boar; The eider duck; The Pilgrim's turkey; Wild honey and beeswax.
3. Buildings: Homes in other lands. Cliff dwellers, Zuni Indians, Forest Indians, Longhouse Indians, Eskimos, Hottentots, and Pilgrims.
4. Tools: Lincoln's boyhood on a farm; Washington's boyhood on a plantation; Primitive tools.
5. Vehicles: Evolution of wheeled vehicles.
6. Mills. Primitive mills.

IV. Stories, songs, poems, and supplementary reading:
1. Agriculture: (*a*) Stories: Ceres; Little Red Hen; Story of Joseph; Redheaded Woodpecker; King Alfred and the Cakes; Black Beauty; Io; Arachne; Circe; Little Hen; King Solomon and the Bees; The Walnut Tree that Wanted to Bear Tulips; Peter, Paul, and Espen; The Chariot Race; Will of the Mill. (*b*) Poems: Ploughman; The Husking; The Potato; The Arab's Farewell to His Horse; The Friendly Cow; Little Bopeep; The Three Little Pigs; The House in the Sun; To a Honey Bee; I Remember; The Village Blacksmith; Boy Lives on our Farm; The Miller of Dee. (*c*) Songs: Alice's Supper; Swing the Sickle; Busy Farmer; A Gallop, A Trot; Thank You, Pretty Cow; Song of the Shearers; The Pigs; Quack, Quack, Says the Duck; A Jolly Little Rover; The Carpenter; The Blacksmith Over the River; The Mill. (*d*) Reading: The Story of Joseph; Mondamin; A Wild Horse; The Dog in the Manger; The First Weaver; The Wild Hog and Sharp Tooth; Little Duck and North Wind; How Bodo Found Wild Honey; The Tree and the Woodcutter; Bodo's Hammer and Knife; Children of the Plains; Children of the Cliffs.

REFERENCES.

Art: Perry pictures.

Literature: Greek Myths, by Agnes Cook; Fifty Famous Stories, by James Baldwin; Black Beauty, by Anna Shewell; The Chariot Race (Ben Hur), by Lew Wallace; Will of the Mill, by Stevenson.

Poems: Lowell, Whittier, Stevenson, Mother Goose, Longfellow.

Songs: Eleanor Smith, Gaynor.

Readers: Dopp's Tree Dwellers; Fox's Indian Primer; Æsop's Fables; The Bible.

Modes of expression.

I. Telling:

Reproduction of stories, description of nature observations, and the recounting of historical episodes and narratives.

II. Drawing on the blackboard, painting, and cutting colored posters:

Representation of the activities of the farm; the animal life, and the shelters; tools and vehicles on the farm.

III. Making and doing:

1. Agriculture: Sow seeds on sand table in appropriate fields. Germination; capillarity of soils; pollization; visit a farm, observe plowing, sowing, etc.; visit a mill, observe process of grinding wheat; visit a bakery, observe process of making bread; making bread in school; cooking cereals; canning, preserving, drying fruits; making jelly; making maple sugar.
2. Animal life: Making butter, cheese, and curdles; cooking eggs; making soft soap.
3. Buildings: Making house, barn, henhouse, windmill, pigpen, dovecote out of clay or manila paper; making gates and fences, cart, wagon, and sleigh out of wood and manila paper.
4. Tools: Cutting from tin—plow, drag, scythe, hoe, rake, ax, saw; making thrasher out of manila paper.
5. Mills: Making flour mill and wheat elevator out of manila paper.

IV. Modeling:

1. Agriculture: Model wheat, corn, potatoes, before and after germination.
2. Animal life: Model horse, cow, pig, hens and ducks, and place them in fields on the sand table.
3. Shelters: Model buildings.
4. Tools: Model tools in clay.
5. Model primitive mills: Cliff dweller's mealing stones; Zuni turning stones; water mill; windmill.

V. Gesture:

Stories, songs, poems, and reading lessons reproduced in pose and dramatization.

VI. Writing:

Development lessons in reading and language, reproduction of stories, and original accounts of specific lessons given in the subjects of study.

NUMBER VALUES IN THE BUILDING OF A FARM ON THE SAND TABLE.

Out of doors:

Material: Tape measure, twine, and pupils.

Statement: 1 acre equals 8 rds. by 20 rds.

1 rod measured on the playground.

1 sq. rd. measured on the playground.

1 acre measured on the playground.

In the schoolroom:

Material: Rules, pencils, and checked paper.

Statement: 1 rd. reduced to ½ in.

1 picture rod on paper equals ½ in.

1 picture sq. rod. on paper equals 1 check measuring ¼ sq. in.

1 picture acre on paper equals 8 checks by 20 checks or 4 in. by 10 in.

1 sheet of checked paper measures 8 in. by 10 in.

4 picture acres can be drawn on 1 sheet of checked paper.

On the sand table:

Material: 24 sheets of checked paper with 4 picture acres on each.

Statement: 1 rd. equals ½ in.

Sand table measures 32 in. by 72 in.

Reduced to rods, equals 64 rd. by 144 rd.

Area of sand table covered with 24 sheets of checked paper with 4 acres in each.

Margin on two sides left for roads.

Counting picture acres on the sand table.

There are 56 acres in our farm.

Laying out the sand table in fields—16 acres of corn, 8 acres of millet, 12 acres of meadow, 24 acres of wheat, and 12 acres of oats, 16 acres for farmyard, and 8 acres for orchard.

IV. BUILDING A TOWN ON THE SAND TABLE.

A PLAY PROJECT.

The building of a town on the sand table offers an opportunity for concrete lessons in civic life through a study of the problems which the child must meet in his everyday experiences. The town government, the laws of conduct in public places, and many of the facts concerning drainage, sewerage, and sanitation may be impressed by this mode of teaching. Wholesome forms of recreation may be suggested, and ways and means indicated by the teacher whereby the children in a town may help to beautify it, to improve its appearance, and to make it a pleasant place in which to live.

The choosing of a profession, a trade, or an occupation by a child who assumes some of the responsibility of the character he represents, even in play, must lead him to appreciate the service which the older members of his community render to the people with whom they live.

1. *Laying out the town on the sand table.*—A group of children from the first to the fifth grades were building a miniature town on the sand table. Streets had been laid out and the town platted into blocks and town lots. A central square, in which the courthouse, the church, and the school were to be set was surrounded on four sides by streets and business block after the plan of many county seats in this country.

2. *Selecting and fencing the lots.*—The home lots were chosen in the same way that homesteaders select their farms in the West, by right of first possession. In the schoolroom the children swarmed around the table when the signal was given and located their claims. When the fencing operations began each child, with a small bundle of toothpicks, fenced in his lot by sticking the toothpicks in the wet sand along the line of his boundaries.

3. *Government of the town.*—The town government was organized by the class and children selected by them to administer it. Laws of conduct on the street and in public places were discussed. One child, speaking evidently

from a full experience, announced, "You don't dare snatch an apple off the fruit stand," and another informed the class with a solemn shake of the head, "If you ride a bicycle on the sidewalk, you get pinched."

4. *Professional life and business life.*—The professions were represented by children whose fathers enjoyed distinction as physician, lawyer, minister, or professor. The little girls chose the womanly occupations, those of milliner, school-teacher, seamstress, and clerks in the post office and the dry goods store. The butcher, the grocer, the druggist, and the merchant were all represented by their tiny shops on the main thoroughfare of the town. The milliner shop, made of manila paper, and measuring just 2 inches by 1 inch, sported a gay front window, with hats and bonnets painted on in the very latest models.

5. *Drainage and sewerage.*—Drainage and sewerage, street lighting, and paving were studied and a fund of experience revealed by children who had stopped along the street on their way to school to look into holes under sidewalks that had been opened for pipe laying and sewer cleaning. Bridges were built across the river that ran through the town, and pavement laid along the street with blocks of clay.

6. *Amusements.*—The last demand that came from this small community was for some form of amusement. The circus appealed to the popular fancy, and an open field at the end of the town was selected where a tent was erected and a circus parade was planned for. So eagerly was the material for this popular pageant contributed that when the circus procession was finally formed it extended twice around the town and out even to the door of the tent.

Stories, songs, and poems.—Stories, songs, and poems for the work in literature were selected which had a bearing on the various subjects of study. These were taught to the children and then used as a basis for reproduction in the different modes of expression. "Romulus and Remus, and the Founding of Rome," is a good example of this type of story. Songs of the trades, like "The Carpenter," and poems like Longfellow's "My Lost Youth" not only have a special significance from the tropical standpoint but are beautiful in themselves and well worth a study by the children.

Geography.—Even the circus parade disguised itself as a geography lesson when a small boy inquired of the class, "Where do all these animals come from, anyway, I'd like to know?" The circus was soon forgotten in the deluge of information concerning animal habitat with which the boy was overwhelmed.

Reading and language lessons.—Descriptive sentences, formulated by the class, concerning the fascinating processes of town building were used for the reading and language lessons.

Number lessons.—A constant demand for measurement in platting the town, in making the buildings, in buying and selling commodities, gave rise to many practical problems of a pertinent character.

Map drawing.—Out of the demand for information regarding the plan for these lessons, maps were drawn and descriptions written by the children for other grades who desired to work out a similar project.

Modeling and making.—Cardboard sloyd played an important part in the building projects. The houses, the shops, and the other public buildings were made of manila paper and cut and pasted to definite measurements.

Blackboard drawing; painting and making colored posters.—Reproductions in blackboard drawing of the town and its special features were used for lessons in chalk modeling. Landscapes of towns were painted and posters were made during the art period.

Posing and dramatizing.—Stories were told of the building of towns of peculiar construction and origin and of founders of some of the old historic cities, which led to the dramatization of many of the incidents in the story.

Children's initiative.—Henry was just 5, of the right kindergarten age, yet quite mature enough to bear all the responsibilities of the citizenship which had been assumed by the older members of the school community. When the children were fencing their lots, Henry's deft little fingers had finished the front fence and those on either side of his lot before the other pupils had fairly begun. While they were cutting and pasting their tiny pasteboard houses, Henry had finished his and had made in addition a smaller one which he called his "garage." When the houses were all finished and placed in their respective owner's lots—Henry had secured a corner lot of superior location on the opening day—something new and strange occurred each day on his little domain. Some one noticed a pile of toothpicks behind his garage after the fencing was finished and asked him how he had acquired them.

"Well," he explained, "I picked them up around the town after the others had done fencing their lots, and now if you want any more wood, you'll have to buy it from me."

One morning he surprised us with a new line of fence running back from the road through the middle of his lot.

"You see," he announced, "I had a larger lot than I needed, so I fenced off half of mine to sell."

Side lights were thrown upon the child natures within the class which revealed many personalities as interesting as Henry's proved to be. Adjustment to his relationships in home and school communities became easier for each child as he understood their significance through the medium of the play home and school community.

V. A SCHOOL PLAY AS A PROJECT IN HISTORY AND LITERATURE.

A school play which was written and acted by the fifth grade in a large city school is an excellent example of the unifying influence of a project upon a disorganized group of boys and girls in one of the middle grades. The pupils in this group were segregated from the grade because for various reasons they were not fully prepared for fifth-grade work as regards especially the technical subjects. Some project was sought by the teacher in charge which would coordinate the work and at the same time build up a morale within the group of responsibility and determined effort. They were all highly endowed with histrionic ability, which perhaps accounts for their failure in the fundamental subjects which had been taught to them largely in the form of abstract drills. As the play developed they were brought together into complete unity of purpose through their interest in the working out of their project.

The play centers around the historic episode of Roland and Oliver and was taken from one of their lessons in medieval history. Briefly stated, it is this: Charlemagne, the king, becomes estranged from his sister, Bertha, through her marriage with the false knight Milon. He banishes them and they flee to Italy. After their son, Roland, is born Milon deserts Bertha, who is forced to live in great poverty in a hut in the forest near the town of Sutri, where Oliver, the governor's son, resides. A warm friendship springs up between Roland and Oliver and the two boys grow to young manhood in a constant companionship. Oliver protects his friend Roland and his mother from many hardships and often brings them food to stay their hunger.

The play opens with a scene in the forest where Bertha and Roland are gathering firewood. Their little hut is seen in the distance.

The second scene is the banquet given by the governor in honor of Charlemagne, who with his retinue of knights and servants, and accompanied by his two daughters, the cardinal, and the lords and dukes from his court, are traveling through the country on a tour of inspection.

The reconciliation between Bertha and Charlemagne and the bestowing of knighthood upon the young Roland by his emperor uncle form the pivot upon which the play rests.

HOW CHARLEMAGNE FOUND ROLAND.[1]

A PLAY IN TWO ACTS BY GRADE V.

FOREWORD.

By one of the pupils.

We have been reading the history of the Middle Ages and have found the story of Roland and Oliver very interesting. We have written a play about it called "How Charlemagne Found Roland." The characters are Charlemagne, Emperor of France; Bertha, his banished sister; and her son Roland; the governor of Sutri and his son Oliver, the friend of Roland; the Princesses Adelaide and Berthaide; the knights, Duke Ogier, Ganelon, Gerier, Gerien, Richard the Old, and others; the cardinal, my Lord Turpin, with pages and servants.

ACT I.

SCENE I. *A rude hut, Bertha and Roland outside the door.*

Roland. Oh, why has my friend Oliver deserted me?

Bertha. Oliver awaits the coming of the great Charlemagne.

Roland. And is Charlemagne to visit our town to-day?

Bertha. Yea, my son.

Roland. And will Oliver see him?

Bertha. Surely he will see him—is not Oliver the governor's son?

Roland. Ah, then Oliver shall tell me of him.

Bertha. Charlemagne is a great emperor, my son.

(*Enter Oliver.*)

Oliver. Oh, Roland, Charlemagne feasts to-day on the village green, with all his knights about him. Come with me and see him.

Roland. Oh, mother, I shall see him, I shall see him.

Bertha. I would that I had food to set before thee, ere thou goest out.

Roland. Never mind, mother, I shall find some food.

Oliver. Oh, Roland, Charlemagne has a long white beard, and a crown upon his head, and his daughters, the Princesses Adelaide and Berthaide, are with him.

(*Exeunt Roland and Oliver.*)

Bertha. Charlemagne, Charlemagne, why hast thou treated me thus? Thou hast so much, while Roland and I are starving.

[1] "This, the only complete play reprinted here, is reproduced as a delightful sample of childish play writing, and as an instance of a teacher's (in this case Miss Florence Fox's) skill in evoking values from her work in literature and history." From "Festivals and Plays," by Percival Chubb, Harper & Bros., publishers, New York and London.

SCENE II. *The same. Roland enters with food.*

Roland. Oh, mother, see what I have brought thee.

Bertha. And pray, my son, where didst thou find this food?

Roland. I saw the king's servants carrying it, and I took it.

Bertha. Oh, my son, my son, thou hast done wrong.

Roland. But why should we starve when Charlemagne has plenty?

Bertha. What will Charlemagne say? He will surely banish thee.

Roland. Do not worry, mother. Charlemagne will not harm me.

Bertha. But, oh, Roland, Roland, my boy, Charlemagne hath power; he could take thee from me.

Roland. I am not afraid of that, mother. Nothing shall separate us.

Bertha. Charlemagne can be kind, but he can be very cruel, too. (*Sighs.*)

Roland. Dear mother—didst thou ever know him, mother?

Bertha. Yea, my son, I knew him well in the long ago, in the long ago.

Roland. Oh, mother, why sighest thou?

Bertha. I sigh at the thoughts of long ago when I was happy.

Roland. I would that I were a man, then I could give thee a beautiful home and make thee happy.

(*Enter Oliver.*)

Oliver. Roland, the knights, Charlemagne's knights, are coming for thee.

Bertha. Oh, Roland, I said they would punish thee.

(*Enter knights.*)

Servant. My lord, this is the boy who took the food.

Oliver. Do not harm him. My father shall pay for the food.

Turpin. Nay, not so, young Oliver. The king demands the boy.

Bertha. Oh, Roland, Roland, what shall I do without thee?

Turpin. (*Kindly.*) Good woman, the king may pardon him.

Bertha. Oh, take him not away—I know I shall never see him more.

Ganelon. Come, Turpin; too long we stay; the king awaits us.

Bertha. Oh, good sir, can ye not pity me, can ye not help me?

Gerier. Come, come, the king doth wait. I fain would end this business.

Bertha. How hard ye are to me and mine. Oh, what shall I do without my Roland?

Roland. Can ye not leave me with my mother? Who will care for her when I am gone?

Oliver. I will care for her, gentle Roland; do not fear for her; look to yourself, dear friend.

Roland. How can I leave thee, mother, so sad thou art, dear mother?

Oliver. (*To Turpin.*) Oh, Sir Knight, does not some pity for this poor woman stir thee?

Turpin. Nay, Oliver, thou must not seek to change a king's command; he bade us fetch the boy. We must obey him.

Oliver. Then I must seek my father—surely he will help us, Roland.

Roland. (*As the knights lead him away.*) Farewell, dear mother; do not grieve; I shall see thee soon again.

(*Roland goes off with the knights.*)

Bertha. (*Wringing her hands.*) What will Charlemagne do? How will he punish my noble boy? Oh, if I should dare to tell him who I am it might gain pardon for my Roland. 'Twere better thus to try than to do nothing. I will away to the king.

ACT II.

SCENE I. *Table on the village green; Charlemagne and knights about it.*

Adelaide. Oh, father, why hast thou sent for this beggar-lad? Do not punish him. Thou hast food to spare.

Charlemagne. I seek the lad for other cause than that he took the food. Last night I dreamed, and it doth trouble me. I fain would know what meaneth it.

Berthaide. Oh, dearest father, tell us of this dream.

Charlemagne. I saw a beggar-lad—a hungry look was in his eyes. They still do haunt me.

SCENE II. *Scene and characters the same.*

Duke Ogier. (*Springing up.*) Ah, here's the rascal who took the food.

Governor. (*Hastily.*) Not so, my lord; 'tis my good son, my Oliver. (*To Oliver.*) How now, my son? What message hast thou? Thy mother, is she ill?

Oliver. Nay, not so, good father. I come to speak for Roland.

Governor. Thou must not come before the king with thy own business. Haste thee away. (*Aside.*) So 'twas the beggar-boy who took the food.

Charlemagne. Nay, let the lad speak. What sayeth he?

Governor. I crave his pardon, my lord. 'Twas his friend who took the food—a beggar-boy whom he doth love most truly.

Charlemagne. Speak out, my lad; what sayest thou?

Oliver. Oh, sire, if thou but knew how poor Roland is, and how his mother suffers! The only food she hath he bringeth her.

Charlemagne. And so he taketh mine. 'Tis wrong to steal, is't not? Hast ever heard it said, "Thou shalt not steal"?

Oliver. (*Sobbing.*) Ah, my lord, but they were starving.

(*Enter Turpin.*)

Turpin. My lord, we have the lad who took the food. 'Twere some excuse; he took it for his mother.

Charlemagne. So thou wouldst beg a gentle sentence for him, my good Turpin? And this boy but now was pleading for him. It seems a beggar-boy can hold a friend.

Turpin. Aye, my lord, he is a goodly lad, and his mother is most sad to look upon.

(*Enter Ganelon and Gerier with Roland.*)

Gerier. Here's the knave, my lord, who hath so far upset this morning's business.

Charlemagne. The lad! the lad! the very lad—'twas he I saw in my dream.

Roland. Most gracious king, I am the lad who took the food. So long, my lord, have we been hungry—so often, sire, have we been starving. Our only home a cave; our only food what Oliver brings. How can I bear my mother's tears? How can I see my mother suffer? 'Twas for her I took the food. I then have eaten none of it.

(*Bertha rushes in.*)

Bertha. I come to plead for my boy, my Roland. Be gentle with him, oh, most gracious emperor. He is noble, he is brave. I pray thee do not harm him.

Charlemagne. My dream! my dream! Do not weep, good woman. Come close and let me see thee.

Bertha. (*As he looks at her.*) Dost thou not know me, Charlemagne? Oh, brother, dost thou not forgive thy sister Bertha?

All. Sister! Bertha!

Oliver. Roland, Roland, didst thou hear?

Roland. Mother, mother, is't true, dear mother?

Bertha. Yes, 'tis true, is't not, my brother.

Charlemagne. 'Tis true, gentle sister. And where is thy false knight, Milon?

Bertha. He left us long ago, when Roland here was but a babe.

Adelaide. Ah, dear Aunt Bertha, glad am I to see thee.

Berthaide. Aye, dear aunt, glad I am to see thee.

Knights. All hail the Princess Bertha. All hail the young Prince Roland!

Charlemagne. (*To Roland.*) The beggar-boy a royal prince! Yet thou wast never poor, so rich thou art in friends. Who owns a friend like this lad Oliver hath that which gold can never buy. I, too, would have thee for my friend, young Roland. What sayst thou?

Roland. So long as I shall live, most gracious king and dearest uncle.

Richard the Old. Our song, our song—"The Sword of Charlemagne."

Gerier. For Roland, too, shall follow "The Sword of Charlemange."

(*All sing the "Sword of Charlemagne."*)

Where'er he leads we follow
To honor and to fame.
We follow, ever follow,
The Sword of Charlemagne.

Where'er he leads we follow,
Thro' Norway and thro' Spain.
We follow, ever follow,
The Sword of Charlemagne.

VALUES OF THE PLAY, HOW CHARLEMAGNE FOUND ROLAND.

I. *Historical.*

1. Manners and customs of the time:

(*a*) Dress: King in crimson robe with ermine cape and gold crown. Knights in black skirts and capes with silver helmets. Each carries a black shield with silver cross, and long black spear with silver tip. Roland in peasant dress, a black smock and short trousers. Oliver in dull green embroidered smock and short trousers. Turpin in cardinal's scarlet robe and cap. Bertha in loose gray dress and long gray veil with silver filet. The governor in hose and doublet of dull blue, embroidered. Lords in hose and doublet of white and silver. Pages in white and green, short skirts and pointed caps. Servants in long brown smocks. Daughters in loose pink and yellow robes, white veils, and gold filet.

(*b*) Food: Fruit and fish and venison, with wine.

(*c*) Modes of warfare: Combats with long spears and defense with shields.

(*d*) Modes of travel: Usually on horseback, and in palanquins.

2. Biographical. Character study of important persons: (*a*) Charlemagne, the king; (*b*) Roland, the peasant; (*c*) Oliver, the governor's son; (*d*) Bertha, Charlemagne's sister; (*e*) Turpin, the cardinal; (*f*) knights, Gerien, Gerier, etc.

3. Ethical lessons: (*a*) Friendship (Oliver's defense of Roland); (*b*) Courage (Roland's defense); (*c*) love (Bertha's defense).

II. *Literary.*

1. Language (written): Play written by children for home work.

2. Language (oral): Discussions of play and parts read by pupils.

3. Language training: The parts, written at home, were submitted to the entire school for criticism, and the best was selected for permanent form. This created much discussion of literary forms and exercise of literary discrimination: (*a*) dialogue; (*b*) dramatic form of expression; and (*c*) analysis of characters and what each might say under certain conditions.

4. Reading: The parts were read by different pupils before the entire school, and the best reader selected by vote to take the part in the play. The effect of these reading exercises was felt in all the oral reading done thereafter by this group.

5. Song: Verses of the song were composed by pupils in the same way.

6. Music: After the verses were decided upon, the music was composed by the same method.

III. *Manual training.*

1. Utility motive: Making of weapons in the sloyd room for use in the play aroused interest and enthusiasm.

2. Educational: It also led to an enthusiastic study of modes of warfare, weapons used, etc.

3. Technical training: (*a*) Spear—long handles of wood painted black and sharp point covered with tin foil; (*b*) shields—large wooden shields painted black with silver cross; (*c*) helmets made of tin, cut and held in form by rivets.

IV. *Ethical.*

1. Cooperation: A disorganized group brought into complete unity through their interest in this play.

2. Altruism: The group selected by vote the best papers for permanent form and all personal preferences were subordinated to the general good. In the same way the prominent characters were selected by popular vote.

3. Ethical lessons: Without doubt the lessons of loyalty and service and filial affection which the play sets forth had its effect upon the individual members of the group, leaving a vivid impression which the ordinary study of historical characters can never do.

4. Color scheme: Act I. The dark forest as a background. Roland in black. Bertha in gray. Act II. Two long tables with ends wide apart at the front of the stage and extending back to meet in the center. Charlemagne seated on a dais at the middle back with flowing white hair and a long white beard, wearing a crimson cloak, an ermine cape, and a gold crown. At his feet sit the two pages in white and green on either corner of the dais. His daughters, one on either side of their father, in pale pink and pale yellow, long veils bound with gold filet. At the outer side of the table on the right are seated the knights in black and silver, at the left the governor in embroidered blue, the cardinal in scarlet, and the lords in white and silver.

Harmony and contrasts of color in costumes: Brown (servants) with white and green (pages); gray (Bertha) and black (Roland) with dull green, embroidered (Oliver); black and silver (knights) with dull blue, embroidered (governor); scarlet (cardinal) with white and silver (lords and dukes).

The Charlemagne group at center back, raised slightly above the others, bring the entire color scheme to a focus at the center of the stage. Crimson and white and gold (Charlemagne); tinted pink and yellow with gold (the daughters); white and green, just below (the pages).

It is difficult to convey an adequate impression of the beauty of this scene both in color and in the flash of movement, the intensity of action and the pathetic appeal of the Emperor's banished sister and her young son, Roland.

VI. A PROJECT IN HISTORY AND LITERATURE.

A HISTORICAL PAGEANT: THE MAY FESTIVAL.

A SCHOOL PROJECT UNDER THE PERSONAL DIRECTION OF PERCIVAL CHUBB.

(As reported by an eyewitness.)

"The day of our May Festival was warm and bright. Can you imagine a pageant of 600 children marching over the greensward of Central Park, bright in costumes of every land and every time? Quaint Colonial dames and squires, dainty Dresden shepherds and shepherdesses, clowns and mountebanks for the May-day sports? Athletes, with rods and dumb-bells, uniformed in suits of blue, crossbarred with white; Robin Hood and his foresters in woodland green with long-bow and arrows; groups of dancing, singing wood flowers—of tulips, snowdrops, and crocuses? The crowning of the Queen surrounded by her knights and ladies; the winding of the maypole by the Dresden dancers; the feats of skill in games and archery, with all the songs of May-time ever sung in any springtime; can you imagine anything so lovely as this in the month of May in the heart of our great metropolis?"

How the festival was made ready.—The costumes for this pageant were planned and made by the children during their sewing periods; the May-pole, the bows and arrows, the staves and swords were fashioned in the sloyd room; songs and games were taught by the supervisor of music, and feats of skill by the physical director. History and literature as central subjects; hearing language and reading as modes of attention; gesture, music, making, painting, drawing, speech, and writing as modes of expression, with concentration and coordination throughout its plan and purpose, here was a project worthy the mind of a great master.

PROGRAM.

Processional.

A tucket will announce the starting of the players from the school.

Song of greeting: "Now is the Month of Maying."

Pantomime prologue: The Death of Winter and the Birth of Spring.

Spring's Awakening.

The sleep of the Flowers. Spring summons the powers of the earth and sky to wake the sleeping Flowers. Rains and Winds and the conquering Sun do her bidding, and the Spring Flowers come forth.

Robin song: "Wake! Wake! Children, Wake!"

The Dawn of May Day.

Song: "Wake! Wake! for the Morn of May."

The lads and lasses gather, frolic together, and choose partners to go a-Maying:

"First of May, the Flora Day,
Can you dance the Flora?"

They go forth to the woods and fields to gather garlands.

Song: "Ye Lads and Lasses."

They return with garlands to the village and perform the rites of purification and invoke the Spirit of Fertility; beating the village bounds; scattering the spirit of prosperity through field and fold, orchard and pasture, streets and houses; decking doors and thresholds; blessing the wells and fountains; and then they unite in a garland dance.

Song: "Arise, Ye Maids!"

The Pageant to the Queen.

A tucket summons the villagers to the market place where they form in procession.

Song: "Come, Ye Young men, Haste Along!"

Progress to the green: Sherwood foresters; the May Queen, her attendants and train; the maypole dancers and peasants; the villagers, swordsmen, and dancers.

Song: "Come, Lasses and Lads."

The Enthronement of the May Queen.

The Lord of the May presents the Lady of the May with the insignia of office: Wreath, crown, and scepter.

Song: "Give to Our Lady o' May."

Homage to the Queen by her followers, including: The Harbingers; the Sun and the Robin; the Garland of the Harvest May or Spirit of Plenty; Spring and the Flower Maids and Heralds; the Queen and the Bearers of her Insignia; Lords and Ladies.

Jack-in-the-Green and the Sweeps; Mother Goose, her faithful bird, and her brood—Boy Blue, Bo Peep, Mistress Mary, Miss Muffet, Simple Simon and the Pieman, the Queen of Hearts, Jack and Jill, Mother Hubbard, Jack Sprat and his Wife, April Fool.

Dance of the Lords and Ladies.

Song: "Hail! Hail! Sweet May!"

Sports and Revels on the Green.

1. Robin Hood and His Sherwood Foresters.

Robin Hood and his companions—Maid Marian, Little John, Fair Ellen, Allen-a-Dale, Will Scarlet, and Friar Tuck—greet the Queen. The Hobby-Horse causes trouble. Robin summons the men and maids of the merry greenwood, who march before the Queen.

Song: "Robin Hood and Little John."

They display their prowess with the bow in an archery exercise; then retire, dancing a woodland May dance.

Song: "Bow and Arrow Bearing, lo! the Archer."

II. Maypole Rites and Dances.

The peasant dancers bedeck and do honor to the maypole; then dance around it.

Song: "Come, Lassies and Lads."

III. The Fencing Combat and the Tumbling.

Salutation of the Queen by the rival villagers.

Song: "Lavender's Blue, Dilly, Dilly."

The challenge (Orange). The acceptance (Lemon).

The Combat.

The rivals, in token of good-fellowship, give a display of their athletic agility before the Queen in pyramid formations and tumbling. They then greet the maids of the rival villages, who unite in friendly dances—the Morris Dance, the Faithful Shepherd, and the Trenchmore.

Reassembling of Players and Recessional.

Song: "Hail! Hail! Sweet May."

VII. MAKING A GROCERY STORE.

A THIRD-GRADE PROJECT IN SLOYD AND NUMBER.

This was a community project in which each child in the grade had some part. The class visited a grocery store frequently during the process of the work.

They used a dry goods box, 22 inches long, 16 inches wide, and 10 inches deep. It was lined with manila paper and stood upright on one of its longer sides. The shelves, of thin pieces of wood, were fitted to the back of the box in length and were each 2½ inches wide. The lower shelf was 3½ inches from the floor, and they were all 1½ inches apart.

The counter was made by nailing narrow pieces of wood like the shelves into a box measuring 1 foot long, 3 inches high, and 3 inches wide. It was sandpapered to make it smooth.

The showcase, made of small pieces of glass, was fastened together with passe partout paper and looked like a glass box when finished, measuring 3 by 3 by 2 inches.

The balances were made of wood. The upright was a square stick of wood one-half inch on each side and 4 inches high, with a standard nailed to the lower end and a notch out in the upper end. The standard was a square block of wood measuring 2 inches on each side. The beam was a small rod of wood measuring one-eighth inch in diameter. The measures were made of square pieces of manila paper tied at each corner with a string and the strings tied together and tacked onto each end of the beam.

The balances were painted black and were set on the counter. The outside of the box was painted white and the shelves white. Moldings were nailed on

the front edges of the box and these were painted red. A sign over the store was painted white with a red molding at the top. The grocer's name, Mr. Dooley, by unanimous choice, was painted on the sign in black letters.

Paper cutting and pasting.—Bushel baskets and pails were cut and pasted out of manila paper and drawing paper.

Modeling and water-color painting.—Fruit cans, candy boxes, breakfast-food boxes, candy, flour sacks, cheese, apples, and potatoes were modeled out of clay and painted with appropriate colors.

The cans and boxes were placed on the shelves, the candy in the show case, the cheese on the counter, and the bags of flour and baskets of apples and potatoes were around the counter on the floor. Mr. Dooley and a customer, Mrs. Jones, were modeled in clay and painted. Mr. Dooley stands behind the counter, and Mrs. Jones, with her basket on her arm, is buying her groceries.

Language.—Price lists and names of commodities were written after each visit to a grocery. Orders for groceries were written and delivered to Mr. Dooley, who was impersonated by one of the pupils. Bills were sent out and collected; paper money was made by the class and used in buying and selling.

Reading lessons.—Each step of the work was used as a basis for reading. These were development lessons written on the board by the teacher at the dictation of the class. They were read from the board and copied into their language books. Later they were typed and bound with a series of similar lessons into permanent form and used as a project reader.

VIII. MAKING BREAD IN SCHOOL.

A PROJECT IN COOKING.

There is no project in the elementary school that may be of greater value to the children than lessons in cooking plain, wholesome food. This project on bread making is given here because it has been worked out in primary rooms of first and second grade children many times and never fails to become a valuable lesson both to the pupil and to the family at home. The difficulty of baking bread in an ordinary schoolroom may be overcome if there are gas jets or electric fixtures in the room. Then a gas plate and oven or an electric grill and oven may be borrowed at home by some pupil and brought to school for this lesson. There is always an advantage in having children watch the process of baking which, of course, they miss if the bread is loaned out to bake. The simplest method possible is given in this lesson, in order to remove any difficulty which the teacher might fear in attempting this project.

The teacher gives two pupils 40 cents and sends them to the grocery store to buy flour, milk, and yeast. She asks them to bring back the change and requests the class to figure out how much money will be left when the materials are bought. Have them make out a bill in correct form and compare it with the grocer's bill when the children return from their errand.

To groceries for bread:

4 pounds flour @ $0.06	$0.24
1 cake yeast @ .05	.05
1 pint of milk @ .08	.08
	.37
By cash	.40
Credit	.03

The teacher can borrow a pan from some one who lives near the schoolhouse, and set the bread overnight. Let the children stir the milk, diluted one-half with water, into the flour, and also add the yeast, dissolved in half a glass of water. A spoonful of salt and a tablespoonful of sugar should be mixed with the flour before the wetting is added. These the children can bring from home.

In the morning the sponge will be ready to knead. Have the children wash their hands carefully, and then give each one a handful of dough, which has been stirred in the pan to a stiff sponge. If possible, have the children stir the dough. The dough can be laid on each desk on a large sheet of drawing paper or some of the children can work around a table if a large one is in the room. (See picture.) If a little flour is first sprinkled on the paper the children will have no difficulty in kneading the bread.

Have the children write their names on long, narrow strips of paper before they begin to knead the bread. When the little loaves are ready for the pan let each child place the strip of paper containing his name under the loaf which he has prepared. The name, written on the upper end of the strip, should be in plain view.

Have ready some biscuit tins, also borrowed, well greased with lard or butter, and have the children lay their loaves of dough in the pans side by side, with the name of each pupil by his loaf. These loaves will be about the size of the rolls which we buy at the bakery.

When the loaves are nearly light and ready for baking send them to some house near the school where you have already made arrangements to have them baked. Any mother of one of the pupils will be glad to add the little tins of school bread to her baking if you arrange to send them over on her baking day.

When the bread is baked and is returned to the school wrap each little loaf in a white paper napkin and send it home by the pupil who made it.