dans une petite chambre. La fenêtre était ouverte, et il vola sur l'épaule de la petite boiteuse. La pauvre enfant, charmée de ce bel oiseau, le caressa et lui dit:

"Mon bel oiseau, restez donc avec moi. Je suis si triste, si seule. Vos belles plumes sont si gaies, que ma chambrette commence déjà à me sourire. Mais," dit elle, tristement, "vous préférez la liberté et les forêts."

"Je resterai toujours chez vous. La vraie liberté c'est de faire le bien."

A ces paroles la Fèe Candide quitta la forme de la boiteuse.

"Mon enfant," dit elle avec tendresse, "je vais vous transporter dans votre palais. Vous êtes digne de porter une couronne."

Chéri régna longtemps. Un jour il épousa même la plus belle princesse du monde.

# Fifth Grade

## Clara Isabel Mitchell

**Cooking:** In March, milk and eggs, as examples of albuminous foods, were chosen for the children's experiments and study.

Sugar, starch, and the albumen of the egg were tested for solubility in both cold water and hot. Sugar was seen to dissolve in either the hot or cold; albumen, in the cold only; starch, partly, in the hot.

The cooking temperature of egg was found to be between 160° and 180° F.; and that of starch was boiling point or about 212°.

Custard and poached eggs were prepared for luncheon, and later, sponge cake at the solicitation of the children. This work took the time of three lesson periods of an hour and a half each.

EXPERIMENT FOR DETERMINING THE COOKING TEMPERATURE OF ALBUMEN.

Fill a test-tube one-third full of white of egg, and immerse it in a beaker of cold water, placed upon a piece of wire gauze on a ring-stand, and fasten it in place. Immerse in the test-tube a thermometer, and gradually heat the water in the beaker, noting carefully the temperature at which the egg begins to show white threads, that at which it grows creamy throughout, and that at which it becomes hard. Finally, boil the egg for some minutes, and examine its texture.

RECIPE FOR SPONGE CAKE.

1 egg.
3 tablespoons of sugar.
3 tablespoons of flour.
½ teaspoon lemon juice.
Speck of salt.

Beat the yolk of egg till thick, and add the sugar gradually, beating all the time. When very light add the lemon juice and salt, and the white of egg beaten stiff. Last, put in the sifted flour, and bake in a moderate oven.

Weaving, spinning, and the hand-work followed the plan outlined in the March COURSE OF STUDY.

**History:** The work in history, as indicated by the last month's plan, was in the aboriginal life of North America. From stereopticon views, maps, and pictures the class got sufficient knowledge of the geography of the continent to be able to arrive at many of the facts of Indian history. These were added to by a visit to the Columbian Museum, class reading of *The American Indian*, by Frederick Starr, and bits read or told by the teacher from Fiske's *Discovery of America*, *Smithsonian Reports*, Bancroft's histories, and Prescott's *Conquest of Mexico*.

During April, the reading will be continued; and the two months' work summed

up in the painting of pictures and in written descriptions.

**Geography:** In March, the class began modeling and drawing the map of North America from a map thrown on the screen by the stereopticon. Attention was first called to the great central valley, the children discussing its advantages and disadvantages as a home for tribes of savages. Both highlands were studied with the same question in mind; then the coast regions. These were drawn, modeled, and described in writing. At the same time, typical areas were painted from the memory of stereopticon views and pictures, with the idea of making the landscape in color a part of the image of the continent.

In April, the Central Plain will be studied in greater detail, the climate, as determined by distance from the equator, returning trade winds, and the Rocky Mountain barrier on the west; great river systems, their work in erosion, in irrigation, their fitness for navigation, and use made of them by the Aborigines; soil, its composition and use to Indians. After this we shall begin the study of the Appalachian Highland in detail. From pictures, the children will get an idea of the forms of the mountains; geological specimens in the museum will tell of their composition, and from these something of their geological history will be inferred; pictures will also tell stories of the vegetation; the relief map will show the river basins.

While modeling this the children will read from: Tarr and McMurry's *Geography;* Shaler's *Our Continent;* Frye's *Geography; The Natural Geography;* and Carpenter's *Geography of North America.*

**Oral Reading:** (MISS FLEMING.) Work outlined for February was interrupted by preparation for Washington's Birthday exercise. Consequently the dramatization of *Rip Van Winkle* was continued into March.

The part taken in the Washington Birthday exercise was the representation of a field school at the time of Washington. All the class took part in dramatizing a scene.

The stage is set with a table for the teacher and benches for the children—the desks being only slanting boards to uprights.

The teacher, one of the children, enters first, dressed in Continental costume (made of blue denim), bright red waistcoat, white wig (made of cotton batting), cocked hat (made of black cardboard), low shoes with gold buckles. He lays aside his hat and cane, arranges the bunch of birch rods and the dunce cap while the children come in and take their seats. The teacher then bows formally to the school, and the children rise and bow.

*Teacher* (rapping upon the desk with ruler). The A-B-C-Derian will step forward.

(Smallest boy in the class goes to the teacher, horn-book in hand. The horn-book is a thin piece of wood four or five inches long, and about two wide, with the A, B, C's, large and small, printed on its face, and covered with isinglass which is tacked down with strips of metal along its four edges. In addition to the A, B, C's is either the Lord's Prayer or the Ten Commandments.)

*Teacher* (frowning, takes out large penknife and points to the letters of the horn-book). What's that?

*Child* (slowly and with effort). A—a.

*Teacher.* What's that?

*Child.* B—b.

*Teacher.* What's that?

*Child.* C—c.

*Teacher.* What's that?

*Child.* D—d.

*Teacher.* What's that?

*Child.* Don't know.

*Teacher.* Don't know? What's that?

*Child.* (Repeats the A—a, B—b, C—c, D—d, but again fails on E—e).

*Teacher* (in disgust). Don't you know E? Say "E."

*Child.* I can't.

*Teacher.* Go to your seat, dunderhead!

(Gradually falls asleep, when another child asks first one why he did not say "E.")

*Second Child.* Can't you say "E"?

*First Child.* Yes; but if I'd said "E," I'd have had all those others to say, too! Didn't you see that long string of letters after E?

*Teacher* (waking up, raps on the table). First scholar in reading! (Another child steps to the teacher's side and laboriously spells out each word of the first sentence of the fifth commandment before pronouncing it.)

*Teacher.* The A-B-ab's will now take their places. (Entire class stands in line for spelling.)

*Child at head of class.* B-a, ba; b-e, be; b-i, bi; b-o, bo; b-u, bu.

*Next child.* D-a, da; d-e, de; etc. (These exercises were given with f, m, and n.)

*Teacher* (pompously). We will now try the *new* method of spelling. Gizzard!

*Child.* G-i, izzard, izzard, a-r-d, izzard, gizzard.

*Teacher.* Hopkinson.

*Answer.* H-o-p, hop, there's your hop, k-i-n, kin, there's your kin, there's your hopkin, s-o-n, son, there's your son, there's your kinson, there's your Hopkinson.

(In the same way words are spelled and missed—damnify, confounded, Liverpool, and incomprehensibility. After several children miss on incomprehensibility, George Washington is called for, spells it correctly, and goes to the head of the class.)

*Teacher* (rapping on the table). Declamations will now be given. Richard Henry Lee!

*Richard Henry Lee* (coming forward and bowing). "Corruption is in the heart of a child, but the rod of correction shall drive it from him!"

*Teacher.* Very excellent! Elizabeth Peyton!

(Elizabeth comes forward, giggles, attempts to speak and cannot. Teacher places dunce cap on her head, and stands her on a chair under the printed sign:

"This is a sight to give us pain,
Once seen, ne'er wished to see again."

Elizabeth slyly makes faces to the children while teacher is not looking.)

*Teacher.* Elliot Taylor!

*Elliot Taylor.*

"Have communion with few,
Be intimate with one,
Speak kindly to all,
Do evil to none!"

(At the last word he kicks the boy in the front seat, the boy howls, and both are switched with the bunch of birches.)

*Teacher.* Constance Randolph!

*Constance Randolph.*

"Our days are filled with trouble here,
Our life is but a span."

*Teacher.* Patrick Henry!

*Patrick Henry.*

"You'd scarce expect one of my age
To speak in public on the stage;
So if I chance to fall below
Demosthenes or Cicero,
Don't view me with a critic's eye,
But pass my imperfections by.
Great streams from tiny fountains flow,
Great oaks from little acorns grow."

(The above is not strictly legitimate, as it was written later than the time represented.)

*Teacher.* We will now be dismissed.

(Children rise one by one, bow to teacher, and leave the room.)

Out on the playground they shout and say: "What shall we do, boys?" "Let's go fishing!" "No—that's no fun!" "Let's ask George what to do—what

shall we do, George?" "Let's play soldier." "Hurrah for George! Soldier!" "French on this side, I'm Captain!" "English on this side, George is Captain!"

The French band drills a bit, marches and countermarches at command of their captain, then goes into ambush. The other band drills under George Washington, marches, countermarches, and is fired upon by the French, whereupon they attack and rout the enemy, all under the leadership of young George; and so the little play ends.

The boys' costumes are like that of the teacher, excepting that the wigs are made of dark curled hair. The waistcoats are of bright shades, all different, made of dress linings. The girls wear little print gowns made with long skirts, plain waists cut low in the neck, tight-fitting sleeves to the elbow, white ruffles in the neck and sleeves; white muslin caps.

**References:** Barnard's *Child Study; New England Primer;* Ella Morse Earle's *Children of Colonial Days.*

In April the oral reading will be *The One-Hoss Shay*, by Oliver Wendell Holmes.

**Number:** In March the children made a chart to show weights of different kinds of foods which make up the diet list of the adult person. The list given by Mrs. Norton was: Meat or substitutes, 3 lbs. per week; fruit, 3 lbs.; flour or grains, 5 lbs.; vegetables, including potatoes, 5 lbs.; sugar, 1 lb.; butter, .8 lbs. On the chart 1 square inch was made to represent 1 lb. The sugar was indicated by 1 inch square, the butter by $\frac{4}{5}$ of 1 inch square, the meats by rectangles 1 inch by 3 inches, the flour and vegetables by rectangles 1 inch by 5 inches. The whole weight of the week's food was 17.8 lbs., or nearly 18 lbs. A rectangle 9 inches by 20 inches or one 6 inches by 3 inches was made to represent the entire weight.

The following statements were the matter on the chart:

Weight of meat= $\frac{3}{18}$, or $\frac{1}{6}$, or $16\frac{2}{3}\%$ of whole weight of week's food.

Weight of vegetables, $\frac{5}{18}$, or $27\frac{7}{9}\%$ of whole weight of week's food.

Weight of flour= $\frac{5}{18}$, or $27\frac{7}{9}\%$ of whole weight of week's food.

Weight of butter= $\frac{4}{5}$, or $\frac{4}{90}$ of $\frac{1}{18}$, or $\frac{4}{5}$ of $5\frac{5}{9}\%$ $=4\frac{4}{9}\%$ of whole weight of week's food.

Weight of sugar= $\frac{1}{18}$, or $5\frac{5}{9}\%$ of whole weight of week's food.

Weight of sugar= $33\frac{1}{3}\%$ of weight of meat or fruit.

Weight of sugar=20% of weight of flour and vegetables.

Weight of sugar=125% of weight of butter.

Weight of butter=80% of weight of sugar.

Weight of butter= $26\frac{2}{3}\%$ of weight of meat or fruit.

Weight of butter=16% of weight of flour or vegetables.

Weight of fruit or meat=300% of weight of sugar.

Weight of fruit or meat=60% of weight of flour or vegetables.

Weight of fruit or meat=375% of weight of butter.

Weight of flour or vegetables=500% of weight of sugar.

Weight of flour or vegetables=625% of weight of butter.

Weight of flour or vegetables= $166\frac{2}{3}\%$ of weight of meat or fruit.

In changing the fractional form to percentage, the children had difficulty in finding equal parts of 100%. They were then given a little work in finding the areas of rectangles as a help to the idea of factoring. They worked out many simple problems, and then were able to formulate the statement that, "one factor of a number being given, the other factor may be found by dividing the number by the known factor."

Many of the class were found to be so slow in the process of long division that they were given abstract problems in this subject to work out at home.

The number lessons in April will be a

part of the nature study for the month, and part of the geography.

Growth of the elms, oaks, willows, birch, ash, maple, and ash-leaf maple twigs will be measured, and averages taken. These averages will be compared and stated in per cents. Weights of carbon, water, and ash in all will be found by drying, charring, and burning; these will be compared.

In drawing and modeling the map, we shall have the average heights of the highlands and great plains of the continent, also exact heights of peaks. We shall then get approximate width and length of continent. These figures, when compared, will show at once the impossibility of making a relief map to a scale which works both vertically and horizontally.

We shall therefore decide on two scales —one for expressing length and width, the other for altitudes. While this scale will not be carried out too rigidly, it will help to a clearer image of exact conditions. The amount of rainfall will be recorded throughout the month, and compared with the average rainfall for this month.

**Nature Study:** (WILLARD STREETER BASS.) METEOROLOGY: The weather record will be continued as in previous months. The northward movement of the sun will be observed with the skiameter. The vernal equinox, which occurred in March, afforded an opportunity for observing the mean elevation of the sun, and of estimating the mean daily amount of light and heat received from it. Comparisons were made with the corresponding amounts received at the winter solstice, and the reason for the winter cold thereby made very apparent.

BOTANY: The work of the month will be a study of the distribution and protection of the living tissues of a tree during the cold weather, and a study of the properties of wood.

The pupils will bring twigs and small branches of trees into the classroom, and by making sections will endeavor to discover the portions from which the growth of the tree will start in the spring. They will then observe how these parts (the buds and the cambium) are protected from the cold, and will make drawings showing the structure and arrangement of the living parts and their protection.

From the study of the parts of the tree which are ready for the coming year's growth, the pupil will find it an easy step to the study of the parts which grew last year. He will be supplied with a small sapling, and beginning from the newest or end section of a twig, will trace back the woody tissue which is continuous with it, until he sees that the latter leads him to the outermost annual ring in the stem. The growth of the previous year may be traced out in the same manner, and the pupil should continue the process until he sees that the general shape of a year's growth of a tree is that of a hollow cone.

The above fact determines the grain of the wood, and is of great commercial importance. To discover the relation between the surfaces which separate the growth of different years, and the grain, the pupils will be supplied with pieces, several feet in length, of small saplings of pine, oak, and other woods. They will first examine the ends of each stick, count the annual rings at both ends, to see whether they are the same or not, and notice the medullary rays. They will then cut the saplings lengthwise with splitting saws, once through the center, and once near the bark. The surfaces should then be smoothed with a plane until the grain shows clearly. The lines which separate the growth of different years can now be traced through the entire length of the stick, and are seen to form the most prominent part of the grain. The pupil will make drawings of

the grain in the three sections which he has before him, and will study how a log should be cut to give a desired kind of grain in the board. Let him decide from what part of the log the wood was cut to make his desk, the wainscoting in the hall, and various articles of furniture.

The class will visit some large wood-working establishment, such as the Pullman car-shops, or Lyon & Healy's factory, and observe what kinds of wood are used for various purposes, and the manner in which they are sawed and finished to exhibit the grain to best advantage.

This excursion will be followed by a study of the qualities of a wood which determine its desirability for various purposes; namely, beauty (which is dependent upon graining and color), strength, elasticity, hardness, durability, and ease of working. Such collections as Hough's American Woods are the most convenient way of exhibiting the beauty of various kinds of wood.

The comparative elasticity and strength of various woods may be tested in the laboratory in the following manner: Let each pupil be given a different kind of wood to work with, and let him make it into a stick twenty inches long and one-half inch square. Let the stick be supported one inch from each end, and let the pupil apply a weight of ten pounds to the center, and notice carefully to what extent the stick is bent by the load. Then let him add ten pounds more, and again measure the bending, and so continue until the stick breaks. The load at which breaking occurs should be carefully noted, and the results of the work upon each kind of wood compared one with the other in respect to both strength and elasticity.

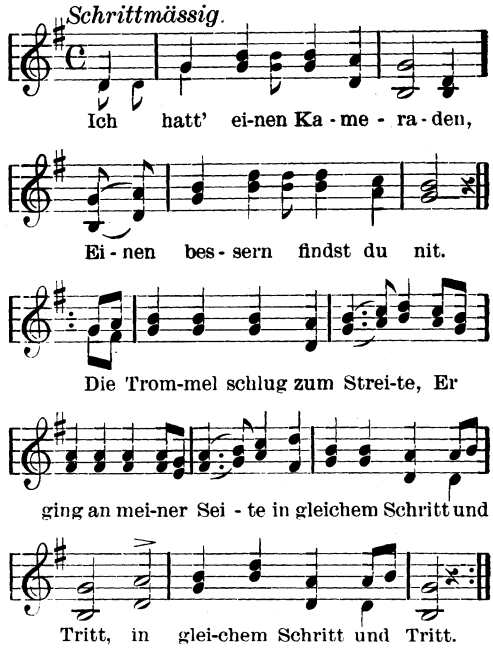
**References:** Pinchoy, *A Primer of Forestry*, Ch. I and II, Bul. 24, Division of Forestry, U. S. Dept. of Agriculture; Dana, *Plants and their Children*, p. 119; Murchie, *Object Lessons in Elementary Science*, Vol. II, pp. 183–198; Bergen, *Elements of Botany*, pp. 52–72.

**Music:** (MISS GOODRICH.) *A Spring Morning*, *In Spring*, *Spring Rain*, Modern Music Series, Second Book; *O Hemlock Tree*, Modern Music Series, Third Book; *Spring Greeting*, *Spring Festival*, *Spring Song*, *The Oak*, Songs of Life and Nature; *The Brave Old Oak*, November COURSE OF STUDY.

**German:** (DR. BENIGNUS.) During April and May the pupils will learn Ludwig Uhland's march, *Der gute Kamerad*, and sing it according to the melody of Friedrich Silcher.

## Der gute Kamerad

Nach einer Volksweise von FRIEDR. SILCHER.




Eine Kugel kam geflogen:
Gilt es mir oder gilt es dir?
Ihn hat es weggerissen,
Er liegt mir vor den Füssen,
Als wär's ein Stück von mir.

Will mir die Hand noch reichen,
Derweil ich eben lad',
" Kann dir die Hand nicht geben;
Bleib' du im ew'gen Leben,
Mein guter Kamerad."
*Ludwig Uhland. Um 1810.*

The pupils have been studying under the teacher of geology the subject of rivers. The following outlines will serve as reading matter and for exercises in grammar.

## Studien an Flüssen

Wenn Regen auf das Land fällt, so sickert ein Teil des Wassers in den Boden, ein anderer wird in die Luft aufgenommen, und ein dritter fliesst auf der Erdoberfläche hin. Dieses Wasser, das auf dem Lande fliesst, wollen wir betrachten.

Was bemerken wir, wenn wir einen Fluss nach einem starken Regen sehen? Ist das Wasser klar, oder hat es Bestandteile des Bodens aufgenommen? Ist die Gestalt des Bettes verändert? Wodurch ändert sich das Bett?

Manche Flüsse führen so viel erdige Bestandteile mit sich, dass das Wasser eine gelbliche Farbe erhält. Diese Stoffe sind meist Sand und Lehm. Was geschieht mit diesen Stoffen? Was können wir an der Mündung des Flusses sehen?

Diejenigen unter Euch, die einen Fluss zu verschiedenen Zeiten des Jahres sahen, wissen, dass das Wasser bald hoch, bald niedrig stand.

Was ist der Grund für diesen Wechsel? Fliesst der Fluss immer mit gleicher Schnelligkeit? Wann führt der Fluss am meisten Stoffe mit sich?

Was könnt Ihr sehen, wenn ein Fluss im flachen Lande über seine Ufer tritt?

Alle diese Verschiedenheiten werden wir in der freien Natur selbst lernen, wenn wir dieses Frühjahr nach den Schluchten nördlich von Chicago gehen.