for it to get its dinner. Do you think the little calf pretty? What do you like about its looks? (It has pretty eyes for one thing; so has its mother).

Children draw pictures of cow and dog side by side. Draw from objects if possible. The teacher will lead the children to correct their own drawings by reference to the objects. Before drawing notice the form of each closely, and compare so as to be able to draw them correctly.

We have found many things that we can do for the cow; now we shall see what she does for us. What does she give us night and morning? How do we get the milk? Which gives the more, the cow kindly cared for or the cow poorly housed and fed? For what do we use milk? Do we get cream from the cow? Do you see it when she is being milked? (No, we see only the milk.) Where do we get the cream? (It rises on the milk.) What is made from cream? (Butter.) Tell me how butter is made. [If possible watch the process.] What is made from cream and milk? (Cheese and cottage cheese.) What else is cream used for? (Ice cream, etc.)

What other food do we get from the cow? What is the flesh of the cow called? (Beef.) Do we eat much beef? What do we call the beef we use? (Steak, roast, soup-bones, dried beef, etc.) Beef is also used in mincepies.

The flesh of the calf is called veal.

The fat of the cow gives us suet for puddings and mince-pies. We also get tallow from the fat. From tallow, candles and wagon-grease are made. It is also used in making soap. Oleomargarine, which takes the place of butter, is made from tallow.

The tongue and heart are used for food.

Is the hair coat of any use to us? (Men put hair in plaster to hold it together.)

Does the thick undercoat keep *us* warm? (Yes, it is made into leather.) From the leather, boots, shoes, and shoe-soles are made. From the calf's coat fine shoes are made.

What do the cow's horns give us? (Combs and knife handles.) Have these in the class for the children to look at.

The hoofs, too, are useful to us. For what? (They are made into glue.) [Have glue in class.] Show pieces of furniture glued together.

Even the bones of a cow are of use to us. For what? (Buttons and knife handles.)

You may tell me all the things the cow gives us.

Which, now, do you think is the more useful to us, the dog or the cow? (The cow.) But they are both our good friends.

A large product-chart or collection of products can be made by the teacher and pupils; it adds greatly to the interest in the subject. Milk, cream, etc., can be sealed up in small bottles

EDUCATION DEPARTMENT, ONTARIO—ANNUAL EXAMINATIONS, 1896.

The High School and University Examinations.

FORM III.—BOTANY.

B.

1. Describe accurately the stem, leaves, and flower of the plant submitted.

2. Define the terms cohesion and adhesion as used in reference to floral organs, and illustrate by reference to Canadian examples.

3. Describe and compare the characteristic features of gymnosperms and angiosperms.

4. What are the essential features of the ranunculaceæ? Illustrate your answer by Canadian types.

5. Give an account of the structure and mode of reproduction of Chara.

ANSWERS.

1. The answer to this question will depend upon the plant submitted. These differ at different centres.

2. The term cohesion, as applied to the floral organs, refers to the presence or absence of any union between the like parts of various sets of organs; that is, sepals with sepals, stamen with stamen, etc.

Examples.—In the phlox the petals are united with one another for two-thirds their length, the upper third of each being separate from its neighbors. The corolla is here said to be gamopetalous. In the dandelion the stamens have their anthers united in a ring around the style, a kind of union designated by the term syngealsious. Various other kinds of union among parts of the same set of organs may take place.

Adhesion refers to the attachment of one set of organs with regard to some other set. For example, in the phlox the stamens are attached to the corolla tube, a method described as epipetalous. In the same flower the calyx is not attached in any way to the pistil. This condition of a calyx is described as inferior or free.

3. The main characteristic of angiospermous plants is the fact that the pistil consists of a *closed* ovary, containing the ovules, which, at maturity, become the seeds. Most of the angiospermous plants produce flowers, which we have no difficulty in recognizing as such. They may be herbs shrubs, or trees.

The gymnosperms include those plants which produce the ovules behind a scale or bract, and thus are not completely protected, or are said to be naked. They are mostly trees or shrubs, chiefly evergreens, and the seeds are produced in "cones," whence the term coniferæ, in which class most of our gymnosperms are included.

4. The ranunculaceæ are mostly herbaceous plants, *e.g.*, clematis, buttercup, marsh-marigold. The petals and sepals are distinct and unconnected, as are also the stamens. The stamens are usually numerous. Buttercup, when ripe the pistil forms an achene; clematis, anemone; a pod, as in the columbine; or a berry, as in blue cohosh.

The leaves are commonly dissected, as in any, of the above examples.

5. For a fairly full description of the chara, with illustrations, see the High School Botanical Note Book, Part II.

Primary Department.

MARCHING.

RHODA LEE.

When the signal to "stop work" is given at a quarter after ten o'clock there is always great promptitude displayed in the careful placing of pencils, the little folks sitting up very straight, with a look of expectancy that says, "I wonder what we are going to do this morning."

And what can we do to rest the tired minds and hands that have been so busily employed, and relieve the feet that have been so quiet on the floor for the last half hour or more? It must be something that will be a complete change and rest and still be an outlet for extra energy that might degenerate into mischief-making.

Fortunately there are enough exercises meeting these requirements to permit of great variety in the recreation. The interest in this period would be apt to flag had we not variety and special favorites for play-time. Sometimes it is a motion-song or calisthenics. Other days we have a game, or a dream, and very often we have *marching*. This is one of the favorite exercises, and can be varied in so many ways as never to lose its attractiveness.

Of course, in marching, as in all kinds of drill, our underlying aim is to promote definiteness of action, and thereby influence character. That is why we find such exercises so helpful—I had almost said indispensable, in obtaining and preserving order.

Marching is a very good index of the spirit of a class. Careless and indifferent in other departments of work, they will be doubly so in their marching; prompt, obedient, and careful at other times, they will be sure to appear so in their drill.

Assuming the desirability of having good marching, and also the necessity for making it attractive, let us consider how best to vary it.

Music is, of course, a delightful inspiration, and this we may have of a primitive kind. Pianos are rarities in the schoolroom. We do not aspire to such, but we have a much-appreciated substitute in the form of a coarse comb and a piece of tissue paper. As a rule, the teacher plays, although sometimes a scholar is found who can produce most inspiring strains.

Sometimes we have been so fortunate as to have a pupil who could play the mouth-organ, and this with the accompaniment of a triangle is everything that could be desired.

Singing we can always have. Words arranged to the tune of "John Brown" make a good marching song. Others are "The Maple Leaf," "Red, White, and Blue," "Keep to the Right, Boys," "Gwine Back to Dixie," etc.

In the serpentine march (marching up and down the aisles in single file) it will spur up your "little soldiers" to tell them that you intend to step in behind the boy or girl who is marching best. You will then see the shoulders thrown back, the chins drawn in, and every child doing his best to induce his teacher to walk next him.

A flag march is another favorite. The best marchers carry each a little five-cent flag. If the room boasts a banner, let one child carry it, and occasionally bring out paper caps for the "captains" to wear. The old paper cap has lost its original office altogether, and, instead of shaming some tearful dullard or truant, it adorns the straightest, manliest little fellows in the class, being, instead of a disgrace, a much-coveted honor.

Another exercise that requires close attention consists in the teacher giving certain commands while the march is in progress, such as "Hands Up," "Down," "Fold Arms," "Out," etc.

Never allow careless marching at any time; in going to and from the board, entering and leaving school, let them march in time and step. With little ones this is at first a somewhat difficult matter, but with care and persistency in starting, always starting with the left foot, it can be done.

READING.

RHODA LEE.

III.

The introductory story must be short and simple, the letter and its sound being the central thought. The object of the story is to associate the sound of the letter with that made by some object fami-