

Besides the evergreen, the sweet fern, hazel, alder, birch and similar shrubs or trees afford good material for observation. Where are their seeds? Distinguish between the staminate and pistillate catkins. Not one per cent of our students know the fruit of the sweet fern. Even teachers occasionally confess that they did not know birch trees had seeds. How such trees reproduce themselves was a question that apparently had never occurred to them.

Nor is it necessary to go to the woods for winter botanical study. Look at the fruit trees in the garden. Which apple tree will have no blossoms next spring? Which one will be heavily laden? The blossom buds are now on the trees. Distinguish them from leaf buds. Where are the blossom buds located? Why are they larger than leaf buds?

Each of these questions will suggest others that the wide-awake teacher or student will wish to investigate.

### NATURE STUDY OF ANIMALS.

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#### NOTES ON THE STUDY OF SOME DOMESTIC FORMS.

A study of our domestic animals would be far from complete if it did not include a reference to some of our larger forms, as the sheep, cow, and horse.

The method of comparison is of great advantage in studying these animals, and should be employed whenever possible.

**Life habits.**—Study the life habits of each. These are best shown when the animals are left free in the open fields. What kind of ground does each select, low or marshy, higher meadows, or hills? Does choice of food influence this selection? Later note that both choice of food, and habitat have had considerable influence upon the evolution of these animals. Which of these chew the cud, and of what advantage is it? Books on zoology or a large dictionary will show that peculiar form of the stomach of cud-chewing (ruminating) animals.

**Manifestations of the emotions.** Does each evince feelings of pleasure, pain, anger and fear in the same way? In which species are these most pronounced? What is the best way to pet each?

Note that few people know how to pet, even the horse; they pat or stroke him on the nose. A self-respecting good mannered horse will usually tolerate such treatment, but will seldom show any signs of pleasure. Rub him gently over the forehead and around the ears, and note the result.

Note the influence of fear upon the attitude and actions of each. How does each defend itself against its enemies? The ram of the flock is in domestication quite often found to pass from the defensive to the offensive, as most country boys know. On such occasions how does he act? Direct attention to the battering ram, and its use in sieges, before the introduction of gunpowder. Whence did man get the idea?

What is the defensive weapon of the ox? Compare the means of defence of the horse? It is supposed that through the habit of fleeing from its enemies during past geological ages its great speed has been developed. What is the natural gait of these animals in the open? The trot has been developed since domestication. In what ways does man take advantage of the speed of the horse, in peace and war? Read Russel's account of "The Balaclava Charge," and note the use of horses in wars of a half century ago.

Are they used as extensively today? Why?

**The body:** What is its covering? How is this used by man? Name the chief kinds of wool, and learn something of the appearances, habits and home of the sheep that produces each. Note its size, and shape.

**The head:** size, shape, eyes, ears, lips, tongue, and the teeth? Do all these animals have the power to move their ears equally well? Does the movement of the ears indicate in anyway their emotions?

**The neck:**—shape, length?

**The tail:**—shape, length, etc?

**The anterior limbs:**—length, number of joints and position and name of each, number of digits and length of each? Compare their feet with those of the dog and cat. On what part of the foot are these animals walking? Which presents the most extreme ease?

Study the posterior leg and foot in the same way. How does it differ from the fore leg, and why?

These studies should aim to establish a fellow feeling, and high ideals as to the care and treatment of our domesticated animals. This phase of nature study has been purposely left till this time, as the lesson is most effectively taught in connection