

NATURE STUDY OF ANIMALS.

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Among the near relatives of insects we must include sow-bugs, centipedes and millipedes. These forms may not look much like insects to the casual observer, but a close examination shows them to be built on the same general plan, in regard to both internal and external anatomy. In common with insects they are built up of a series of segments, the outer covering of the body is hard and crust-like, the head is easily distinguished in all and is provided with eyes, a pair of antennae and similar mouth-parts, and all possess jointed legs.

SOW-BUGS.

Sow-bugs, some species of which are also called pill-bugs from their habit of rolling up into a round ball when disturbed, are dark colored, flat, oval bodied animals, with several pairs of legs.

They live in damp situations under stones, chunks of wood, etc., and in cellars, and respire the saturated atmosphere found in such places.

They live for the most part on decaying vegetable matter, especially that which is offensive to man.

Sow-bugs have a very near relative, the Isopods, found in tide pools all along our coasts. Look for these Isopods. They are so much like sow-bugs in general appearance that one would guess the relationship at once. They both belong to the Order Isopoda (Gr. isos, equal; pous, foot.)

Topics for investigation and study:

1. Note the shape of the body. Is the shape an adaptation? Explain how.
2. Is the body divisible like that of insects, into head, thorax and abdomen?
3. Count the segments. Is there any evidence of fusion in any part other than the head?
4. Examine the eyes. Are they stalked like those of the lobster and crab?
5. How many pairs of walking legs are there? Are they all alike?
6. Examine the mouth-parts with a hand lens, and compare them with the mouth-parts of the grasshopper.
7. On the posterior surface of all of the abdominal appendages except the last pair, which are

modified to form oval feelers, are gills, the only respiratory organ they possess. Look for these with a hand lens.

8. Explain why this animal must live in damp places.

CENTIPEDES.

Centipedes are of world-wide distribution, and are represented in our latitudes by very active, lithe, mostly chestnut-brown, rather fierce looking little creatures, varying from an inch to an inch and a half in length.

They live in damp, dark places, especially under stones and bark, and within or under decaying wood, among barn-yard refuse, in loose soil, and under fallen trees. When disturbed they rush nervously about as if trying to escape.

They feed upon insects and their larvae, snails, earthworms, etc., and often do much good by helping to keep in check many forms of troublesome insects.

Tropical Centipedes are much larger, often being over a foot in length, and are said to be very poisonous. Our species are not poisonous to man though they are able to poison their prey.

Topics for investigation and study:

1. Notice the shape of the body. Of what is it made up? Count the number of segments. Are they moveable? Does the animal show adaptation in form and habits? Explain.
2. Is there a distinct head? Examine the mouth-parts and compare with other forms, such as the sow-bug, grasshopper, etc. Examine the eyes and the antennae.
3. How many appendages are there? Have all the segments appendages?
4. How do the appendages just behind the head differ from the others? These are used for grasping its prey, and are provided with poison glands, which open on their inner sides near the free ends.
5. Note how it uses its legs in running. Do those on a side all move at the same time? Are all the legs alike?
6. Near the base of the legs are small oval openings, the breathing pores, of the tubular or tracheal respiratory system, much like the tracheal system of insects. The breathing pores are hard to see except in favourable specimens. Compare this respiratory apparatus with that of the sow-bug. Do they need such damp situations? Why not?