



Earthworms.

The work which earthworms perform is much greater than many would at first suppose. They are very numerous in most parts of this country, and so apparently insignificant are they, that we seldom notice them, although in cultivating the soil they are at certain seasons numerous exposed to view by the plow. The amount performed by a single worm appears to us very small, but as they work together in large numbers they are enabled to perform much. On each acre of soil, in one year, from ten to twenty tons of earth are brought to the surface by worms.

In the scale of organism they rank comparatively low. Darwin says:—"Although they cannot see they can distinguish between light and darkness. They are wholly deaf, and have only a feeble power of smell. Their sense of touch alone is well developed." The common earthworm (*Lumbricus terrestris*), breathes by means of pores in its sides, and creeps or burrows by means of setae or bristles, which are situated on the segments of the body. In proportion to their size they possess great muscular power. A spiral muscle runs around the body from the head to the tail; it is owing to this muscle that they have the power of lengthening or contracting their bodies at will. One authority states that an earthworm, when cut in two, in the anterior half, will form a head; in the posterior half a new head.

Earthworms are viviparous animals. The female deposits her eggs in the earth, these are hatched by the warmth of the soil in from twelve to fourteen days. One egg sometimes contains two embryos. When the young first appear they are very small, but fully developed, and do not undergo any change of form during their existence. It is not generally known how long their life lasts, but it certainly lasts for more than two or three years.

The following are some of the ways in which earthworms are beneficial to the agriculturist:

1. In reducing the texture of soil and rock.
2. In enriching the soil.

3. By aiding the draining and aeration of soil.

4. By forming passages for rootlets in search for food.

Scientists tell us that the decomposition of soil and rock is aided both mechanically and chemically by the action of worms. The mechanical action, which is small, consists in the grinding movement of the particles, which are moved by the collapsing of burrows. By consuming and digesting considerable organic matter, which is deposited in the earth, certain organic acids are formed whose tendency is to aid the process of dis-integration.

The soil in which earthworms live is directly enriched by them in two ways. They not only consume leaves and parts of plants, but drag them into the ground; as these partly decayed and digested leaves mix with the soil they form plant food. The large amount of subsoil which is brought to the surface also adds to the richness. We will cite, as an illustration, the result of an experiment by a notable scientist. "Von Hensen placed two worms in a vessel eighteen inches in diameter, which was filled with sand, on which fallen leaves were strewed; and these were soon dragged into their burrows to a depth of about three inches. After about six weeks an almost uniform layer of sand, two-fifths of an inch thick, was converted into humus, by having passed through the alimentary canals of these two worms."

Some believe that worm-burrows, which penetrate the ground perpendicularly to a depth of nearly five or six feet, serve as a good medium to aid drainage. Although the worms check the direct entrance of water by depositing castings over their burrows, still the water may gradually soak through and pass away from the surface, where a surplus interferes with vegetation. By the removal of surplus water the air can penetrate deeply and freely into the ground, by passing down the burrows; it can also fill the interstices formerly occupied by water. The presence of air is beneficial to the soil, as it affects the temperature, and supplies moisture and food to the roots of plants.

Worm-burrows greatly aid the downward passage of delicate rootlets, and fibers, in search of food. By occupying the burrows, rootlets can not only extend freely, but can also feed upon the humus with which the burrow is lined.