

known to the world; a remarkable illustration of this may be found in the publication of Mr. Darwin's last work, "Vegetable Mold and Earth Worms." Notwithstanding the vast amount of original investigation, of the utmost importance, on other scientific subjects undertaken by this gentleman, the fruits of which have from time to time appeared in his invaluable works, ever since 1837, when he read a paper on "The Formation of Mold," to the Geological Society of London, he has been accumulating facts and making observations, the results of which are set forth in this fascinating work. Some of the experiments are most remarkable, and the care and patience exhibited by this great worker in carrying them out, are very characteristic of the man; and are so graphically narrated that one who reads the book can almost fancy he has seen them performed. The modifications of the earth's surface by the agency of these small creatures is so great as to be almost incredible, were they vouched for by a less accurate experimentalist than Dr. Darwin. As the result of various careful observations he found that, on one acre of old pasture ground no less than fifteen tons of earth are annually swallowed by worms below the surface, and thrown up above it in the shape of castings.

He points out, too, that the burial of ancient Roman and other remains, scattered over the country, in England, is due to worms, which keep continually throwing up the soil from underneath them, and so let them sink.

Among the insects which do actual good, those which perform the office of scavengers are entitled to more than a passing consideration. These useful insects will be found almost entirely among the Coleoptera or beetles, and the Diptera or flies. As Kirby and Spence's valuable work, "Introduction to Entomology," is not easily attainable in this country, I cannot do better than insert what they have written so well on this subject:—"All substances must be regarded as nuisances and deformities, when considered with relation to the whole, which are deprived of the principle of animation. In this relation stand a dead carcass, a dead tree, or a mass of excrement, which are clearly encumbrances that it is desirable to have removed, and the office of effecting this removal is chiefly assigned to insects, which have justly been called the great scavengers of nature."

"How disgusting to the eye, how offensive to the smell, would be the whole face of nature were the vast quantities of excrement, daily falling to the earth from the various animals which inhabit it, suffered to remain until gradually dissolved by the rain, or decomposed by the elements! That it does not thus offend us, we are indebted to an inconceivable host of insects, which attack it the moment it falls; some immediately begin to devour it, others depositing in it eggs from which are soon hatched larvæ that concur in the same office with ten-fold voracity; and thus every particle of dung, at least of the most offensive kinds, speedily swarms with inhabitants which consume all the liquid and noisome particles, leaving nothing but the undigested remains, that soon dry, and are scattered by the winds, while the grass upon which it rested, no longer smothered by an impenetrable mass, springs up with increased vigour." Many of the Scarabæidæ or Diggers not only live on this filthy material, but dig galleries below the mass into the soil and carry down portions of it, to be food for the young larvæ; the benefit thus conferred is two-fold: not only is the nuisance removed, but a fertilizer is carried down into the soil, and canals are opened by which more may find its way in the same direction, whenever rain falls. The beetles living in dung inhabit it in their perfect as well as larval states; and it is a curious fact, but they are very seldom found to have any of it adhering to them.

"Of the diptera, the larvæ alone derive their nutriment from this source; the imago, which would be suffocated did it attempt to burrow into a material so soft, only lays its eggs in the mass. The members of this order, too, are more select in their choice than the coleoptera—not indeed as to delicacy—but they do not indiscriminately oviposit in all kinds, some preferring horse-dung, others cow-dung, and others that of birds, etc.

"Still more would our olfactory nerves be offended, and our health liable to fatal injuries, if the wisdom and goodness of Providence had not provided for the removal of another nuisance from our globe—the dead carcasses of animals. When these begin to grow putrid, everyone knows what dreadful miasmata exhale from them, and taint the air we breathe. But no sooner does life depart from the body of any creature than myriads of different sorts of insects attack it in various ways. First come the Histers,