1881 Nov 2

The Literary

THE LITERARY WORLD.

Mr. Darwin's New Work.

Various as are the subjects which have occupied Mr. Darwin's attention—from the structure and origin of coral reefs to the emotions of animals and the movements of climbing plants—everything he has touched has been illuminated by his genius. His marvellous capacity for observation, his fertility of invention as an experimentalist, and his persistence in following out any clue presented to him by nature, have enabled him to advance knowledge by giant strides during the fifty years which he has spent in the most laborious work. Now, at an age when it is given to few to retain unimpaired their mental powers, he appears as fresh as ever with a new work on an apparently insignificant a creature as the earth worm. "The Formation of Vegetable Mould through the Action of Worms, with Observations on their Habits" (Murray) completes studies begun quite at the outset of his career as a naturalist. We here learn for the first time the immense importance of the worm as the natural tiller of the soil and the farmer's best friend. It pulls dead leaves and other decaying vegetable and even animal substances into the ground, ejects upon them from its mouth a secretion which partially digests them, and then eats them. In those well-known "castings," to be seen any spring or summer morning on lawns or gravel walks, we have the finely comminuted earth which the worm has passed through its body for the purpose of extracting the vegetable matter; and it also disposes of the earth in digging its burrow by swallowing it. Thus the lower portions of the soil are constantly brought to the surface, their constituents mixed and prepared in the most thorough manner for the growth of vegetation. Incredible as it may seem, a layer of mould one-fiftieth of an inch thick is often thus deposited on the surface during the year, and ten tons of earth per acre is annually passed through the bodies of worms in many parts of England. On sloping ground this fine earth is carried away by rain to lower levels, where it forms extremely fertile soil. Long before man ploughed the earth—ages before his existence, even—the worm was at work, draining the land with its burrows, and opening a way for seeds and the roots of plants. These innumerable living ploughs have all unconsciously laboured, when, in past geological ages, there was perhaps nothing higher in organisation than they, to fit the earth for the habitation of nobler creatures, and, feeble as they individually are, the result of their combined effort has been stupendous. Just as enormous masses of rock, forming in some instances whole mountain ranges, have been built up by foraminifers, so the alluvial soil of the earth has passed repeatedly through the bodies of worms for untold ages to prepare it for plant life.

Nothing could exceed the ingenuity of the experiments devised by Mr. Darwin to induce the worms to furnish the information he was seeking. To those who are not born naturalists it would seem almost childish folly to watch hour after hour and day after day the operations of these humble creatures. Yet one of the most profound thinkers of this or any time thought it worth while to mark the smallest details of an existence which has played so great a part in the physical history of the world.

Though devoid of the organs of sight and hearing, worms are sensitive to light and changes of temperature, and exhibit taste in their preference for one kind of food rather than another. That they are not wanting in some kind of intelligence is proved by their habit of plugging up their burrows to hide themselves from the sharp eyes of birds, though this is by no means always effectual, and Mr. Darwin believes that they have a trace of the social feeling. Spread all over the world, from the arctic, through the tropical, to the antarctic regions, wherever the soil contains a trace of organic matter, there can be no doubt that these soft-bodied animals produce a greater effect in Nature than the most highly-organised animals. In lucidity of style, precision of statement, and scientific acumen, this work will take as high a place in natural philosophy as any that has hitherto emanated from the mind of its distinguished author.

© Reproduced with the permission of Cambridge University Library