

## MR DARWIN'S NEW BOOK.

Mr Darwin's latest book, "The Formation of Vegetable Mould through the Action of Worms, with Observations on their Habits," is written, the author announces, in order to show "the share which worms have taken in the formation of the layer of vegetable mould which covers the whole surface of the land in every moderately-humid country." A study of Mr Darwin's book, says a critic, will lead the reader to doubt with the author "whether there are many other animals which have played so important a part in the history of the world as have these lowly organised creatures." Every farmer knows that if lime or manure is spread over the ground, or if stones are placed on the surface and left undisturbed, in course of time they disappear below the surface. This the farmer attributes to a natural tendency of things to sink. Entire ruined buildings, and even towns like the old Roman towns of Silchester and Uriconium, have thus in the lapse of centuries become buried under several feet of earth. This, no doubt, is partly due to wind-driven dust, and to rain, but mainly, as Mr Darwin shows, to the unceasing excavation of myriads of worms. These humble creatures are constantly busied in boring their burrows. They eat their way under the ground, casting the earth above-ground. The whole earth beneath our feet, from a depth varying from an inch or two to four and even more feet, is riddled with their holes. It is calculated, on a very low average, that there are something like 10,000 worms in every acre of land. These are continually boring their holes and throwing up the earth, with the general result, it is calculated, of adding to the surface earth brought from beneath and passed through their bodies equal all over to one-fifth of an inch annually, and weighing several tons to the acre. So that, in the course of five years, a fresh layer of earth, one inch in depth, is spread over the surface wherever worms can find shelter. This has been going on for untold ages. Mr Darwin's book almost entirely consists of instance upon instance of the work thus performed by worms in all parts of the world. Something like 40 years ago he had a field of his own covered over with chalk for the purpose of observing the result; he waited about 20 years for this, and when the ground was trenched the chalk was found in a uniform layer many inches below the surface, with abounding evidence that the result was the work of the worms. "When we behold a wide, turf-covered expanse, we should remember that its smoothness, in which so much of its beauty depends, is mainly due to all the inequalities having been slowly levelled by worms." Probably more than any other natural agency have they been the means of fertilising the earth. Not only, as we have seen, do they completely renew the soil in the course of a few years, and fertilise it by passing it through their bodies, but they drag down from the surface tons of leaves, and refuse of all kinds, partly to be used as food and partly to line their burrows with. For these they construct with great care and ingenuity, lining them sometimes with finely triturated soft and smooth earth, and sometimes even with a mosaic of fragments of leaves; all serving as a natural manure. Even the very soil itself, which should be called animal rather than vegetable mould, often owes its existence to their persevering labours. Mr Darwin shows that they have the power of penetrating and triturating rocks of wonderful hardness; and this process continued for thousands of years must have produced results of stupendous magnitude.