

Mr. Darwin has given us few books more valuable, more characteristic of his genius, more truly scientific in spirit and in scope than *The Formation of Vegetable Mould through the Action of Worms*. (Murray.) It is a monograph of that much-despised and that most useful creature the earth-worm, showing what good work it performs in the economy of nature, and how much indebted the world is to it for the formation of that most essential part of it, namely, the mould which covers the earth's surface. The benefit which this, the most humble of animals, confers upon humanity is scarcely to be over-estimated. "It may be doubted," says Mr. Darwin, "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." They are the architects of that crust of the earth which is the field of agriculture; without them there would hardly be any ploughing or sowing, for there would be nothing to plough and nothing on which to sow. They are perpetually delving, draining, and manuring the earth when the farmer is asleep. All vegetable mould is, in fact, their work. They loosen the soil and aerate it, taking down bits of leaves and other decayed litter from the surface to the roots of plants, and thus providing them with manure. All the loose surface of the earth may be

plants, and thus providing them with manure. All the loose surface of the earth may be described in fact as the accumulation of myriads of worm-casts, and the process is being repeated and renewed continually, so that our soil is, through this agency, being constantly changed, aired, and fertilised. The whole earth teems with worms, it being calculated that there are some 50,000 to every acre. Not only are they perpetually dragging leaves and vegetable matter below the surface, but "the bones of dead animals, the harder parts of insects, the shells of land molluscs, are before long all buried beneath the accumulated castings of worms, and are thus brought in a more or less decayed state within reach of the roots of plants." Not only do worms perform an important agricultural office, but they are even potent in effecting geological changes. What they eat undergoes a chemical action through the acids in their bodies, and this, cast out, has ultimately an effect even on hard rocks. Mr. Darwin has made out a case for the earth-worm such as ought in future to make us treat it with more tenderness. In fact, for the first time in any true sense, the worm has "turned."