

at first suppose. In almost all humid countries they are extraordinarily numerous, and for their size possess great muscular power. In many parts of England a weight of more than ten tons of dry earth annually passes through their bodies, and is brought to the surface, on each acre of land; so that the whole superficial bed of vegetable mould passes through their bodies, in the course of every few years. From the collapsing of the old burrows the mould is in constant though slow movement, and the particles composing it are thus rubbed together. By these means fresh surfaces are continually exposed to the action of the carbonic acid in the soil, and of the humus-acids which appear to be still more efficient in the decomposition of rocks. The generation of the humus-acids is probably hastened during the digestion of the many half-decayed leaves which worms consume. Thus the particles of earth forming the superficial mould are subject to conditions eminently favourable for their decomposition and disintegration. Moreover, the particles of the softer rocks suffer some amount of mechanical trituration in the muscular gizzards of worms, in which small stones serve as mill-stones." But the worm is not only the fertiliser of the soil, and the destroyer of the rocks; he is also the source of beauty and enjoyment. "When we behold a wide, turf-covered expanse, we should remember that its smoothness, on which so much of its beauty depends, is mainly due to all the inequalities having been slowly levelled by worms. It is a marvellous reflection that the whole of the superficial mould over any such expanse has passed, and will again pass, every few years, through the bodies of worms." Before the plough was invented this ancient husbandman tilled the soil, and being of old-fashioned tastes he failed to adopt the implement in question when it was invented, and still continues to despise its use. "The plough is one of the most ancient and most valuable of man's inventions; but long before he existed the land was, in fact, regularly ploughed, and still continues to be thus ploughed, by earth-worms. It may be doubted 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." The *Spectator*, in an article on the work from which we quote, alludes as follows to its bearing upon the argument adduced to prove conscious Design in Nature:—"We call attention to the subject, however, not, of course, because we can add anything whatever to the evidence adduced by Mr Darwin, or to the physical inferences which he has so acutely adduced from that evidence, but because he has said nothing concerning what seems to us one of the most important of the aspects of the case,—the bearing of this discovery of his on what is ordinarily called the argument adduced to prove conscious Design in Nature. Hitherto, the tendency of Mr Darwin's writings has been declared by the great school of Continental Atheism to be all in favour of their materialistic view of Nature. It has been shown, they think, that what was mistaken for anticipatory purposes by our old naturalists, was nothing but the selective tendency, necessarily resulting from the great conflict for existence, to favour such variations in organisation as help the individual to live, and to extinguish such variations in organisation as render the individual less fit for the great *mêlée*. It has often been pointed out that, though this criticism would have some weight as regards all those variations which benefit the individual even in their initial and immature state, it has no weight as regards those variations in organisation which do not benefit the individual at all until they are complete. The sensitiveness of a nerve, for instance, is supposed to be the rudimentary stage of a new perception; but though a new perception of the outside world, so soon as it is really complete, would constitute an immense advantage to the creature possessing it, a new sensitiveness which carried no new perception of external things, might well constitute one of the greatest conceivable disadvantages in the conflict for existence. This consideration, however, has not forced itself strongly upon the minds of materialistic Atheists, probably because we know too little of the history of the initial stages of those organs which, in their mature stage, are of the greatest advantage to the animal world, to bring its drift successively before the imagination. In the case, however, of the subject of Mr Darwin's present study, it appears perfectly clear that the benefit conferred upon the individual by the work of the earth-worms, is almost in inverse proportion to the benefit conferred upon the individual by that work. In other words, the more earth passes through the worm in proportion to the nourishment which it receives, the more benefit is conferred on the world at large, the more ploughing is done by the earth-worm for the benefit of other creatures, and the more is the soil chemically improved by its agency. Yet, of course, the less work the worm has to do for its own adequate nourishment, the better would be its chance of obtaining that nourishment, and of multiplying its species. We gather, indeed, from what Mr Darwin says, that part of the essential structure of earth-worms—the gizzards, in which the earth is powdered, by being crushed up with the little stones swallowed for this purpose—is provided solely for the execution of this extra work, and is not to be found at all in other varieties of the species which live in mud or water, and feed exclusively on dead or living vegetable matter, without taking the trouble

to grind down an enormous proportion of innutritious soil, for the sake of the very minute fragments of organic matter which it may happen to contain. The function of earth-worms in their ordinary state appears to be closely analogous to that of the miners who grind quartz for the sake of the grains of gold which they find scattered through it, but with this difference, that the miners do not know how to find the grains of gold in equally large supplies in any other way; while the earth-worms, but for the instinct which compels them, at certain parts of the year, to swallow so large a quantity of earth, would find a much richer supply of the nourishment most suitable to them on the surface of the ground, without passing so much that, to them, is pure waste through the mill, for the sake of so minute a proportion of food. It seems perfectly clear, then, that the instinct of the earth-worm has its end, mainly, not in the good of the individual which does that work, but in the good of other and more highly organised beings, who did not even begin to exist on the earth for ages upon ages after the earth-worm had been preparing the surface of the planet for their appearance. These creatures pierce and grind down and bring to the surface the particles of the earth, not for their own good mainly—for they could obtain that good equally well, at far less expense of labour, if, like the mud and water worms, they fed on vegetable matter only—but for the ultimate good of Man. The earth-worms are the ploughs by which the surface of the globe was being prepared to yield man harvests long before either we or our harvests had been even conceived, except in the mind of that Eternal Wisdom to which the future is present, and the present contains the augury of the future."

EXETER HALL has received grounds for grievous A DISGRACEFUL lamentation, but all men of true liberality and TRAFFIC. breadth of mind may rejoice. The Archbishop of

Canterbury, in a word, the Earl of Shaftesbury with other leaders of the "Evangelical" world, and the Cardinal Archbishop of Westminster, have appeared together on a platform in London in advocacy of the same cause—that of the abolition of the opium trade. This trade, we need hardly say, has long been a deep blot upon the fame of England; we should, perhaps, say the deepest blot if the spectacle of oppression in Ireland were not so vividly before our eyes; and in the name of common humanity everyone is bound to detest it. Cardinal Manning in proposing the second resolution—i.e., "That in the opinion of this meeting the results of the sale of opium in British Burmah are a disgrace to our government of India, and demand the most thorough and immediate remedy"—thus described its effects:—"In British Burmah, to which his resolution referred, the population before we entered it were sober, industrious, and orderly, and both their religion and their law positively prohibited the use of opium. Now they found that, in consequence of the introduction of opium, the people had been involved in demoralisation, misery, and ruin, for which we were exclusively responsible. The population were entirely wrecked in body and soul, and there was a universal consensus of opinion among the natives that the traffic should be utterly and entirely extinguished." There cannot, we should think, be any difference of opinion among honest people with respect to the necessity that exists for putting an end to so abominable a trade, whatever may be the interests involved, and we find a double reason for gratification in noting the union against it of all sections of Christians.

THE land agitation in Scotland still continues, and THE SCOTCH Scotchmen, therefore, who condemn the Irish LAND QUESTION. National Land League condemn also an institution under whose shadow their own fellow-countrymen are striking for what they regard to be their rights. It is evident that it was the persistency and ability with which the agitation in Ireland has been conducted that led to the movement among the farmers in England and Scotland. The following paragraph clipped from the weekly edition of the *Times* of October 28 shows how the matter is still being carried on:—"On Friday afternoon a public meeting of the East Lothian Agricultural Club was held in the Corn Exchange, Haddington, to consider the present agricultural depression. Mr. Harper Snowdon occupied the chair, and there was a large attendance. The Chairman, after referring to some of the causes of agricultural depression, said that mere temporary abatement of rent would not avail in the present crisis. There should be a revaluation of farms and a substantial reduction of rents. Were the land revalued and the reduction extended, say for five years, that would enable farmers to keep their lands clean and in good order and enable them to go on with spirit and in hope. But that must be done at once if it were to be of any benefit to the existing tenants. It would even be true and sound policy in the interests of the landlords themselves. Without some such measure, he had no hesitation in saying that a larger number of the present class of tenants would slowly but surely bleed to death, and be turned out of their holdings ruined men. The following resolutions were agreed to:—"That this meeting, believing that farms, taken for a considerable period back,