

The second consists of essays on social questions, grouped under the headings "Educational," "Political," "The Land Problem," "Ethical," and "Sociological." Fresh value has been added to the scientific essays by some excellent wood engravings, and the whole forms an unusually interesting miscellany. No writer of the same class has given his studies a wider range, and none has set forth his opinions and conclusions more clearly and attractively.

In his first essay Mr. Wallace discusses Inaccessible Valleys. Before the Yosemite was discovered it was understood that these existed only in the imagination of story-mongers like Sinbad the Sailor, whose Valley of Diamonds has its modern parallel in the Doone valley, as described by that delightful romancer the late Mr. Blackmore. The latter valley, it seems, is, and always has been, as easily accessible as any other in the British Isles, and the tourist who has vainly searched for the precipice up which John Ridd is fabled to have clambered, with the deep black pool below, turns from the very commonplace "water-slide" he finds in place of it with a feeling akin to indignation. There are no Inaccessible Valleys, so far as we know, in any of the old Continents; only two besides the Yosemite have as yet been described, and these are in New South Wales. It was once supposed that the walls of deep gorges, such as the Yosemite valley, were rent asunder by earthquakes, and this opinion is countenanced by some modern authorities. Mr. Wallace derides the notion, and assures us that they have invariably been formed by the slow erosion of the streams which traverse them. Other geological articles are "The Permanence of Oceanic Basins," "Our Molten Globe," "The Ice Age and Its Work," and "The Gorge of the Aar and Its Teachings." The old theory of a molten globe, having a crust averaging 18 miles thick, is not, in Mr. Wallace's opinion, irreconcilable with the recent and widely-accepted hypothesis which regards the earth as the result of meteoric accretion. Beneath the crust there may well be a molten interior of unknown depth, enveloping a denser core, probably of imperfectly aggregated matter, permeated by liquids and gases. Possibly the separate oscillations of this central mass, in the midst of its molten envelope, may have some bearing on the phenomena of earthquakes.

The discoverer of "Wallace's line"—the boundary between Indo-Malaysia and Austro-Malaysia, with their distinct fauna and flora—is on his own ground when he treats of the geographical distribution of plants and animals; and in discussing the theory of evolution and anthropology, together with the fascinating problems of instinct and heredity, he speaks with an authority only second to that of Darwin, with whom, indeed, he is commonly ranked, in respect of the doctrine of species-variation by natural selection, as a co-discoverer. No doubt Mr. Wallace's paper on "The Tendency of Varieties to Depart Indefinitely from the Original Type," written in 1858, occasioned the publication of Darwin's views in their complete form; but Darwin had long been mentally maturing his celebrated theory, and Mr. Wallace's "progression by minute steps, in various directions, but always checked and balanced by the necessary conditions," can hardly be said to anticipate Darwin's masterly enunciation and application of the doctrine of "survival of the fittest." But Mr. Wallace will always be associated with the Darwinian theory, and his intimate investigation of the orang-outang, described in his "Malay Archipelago," qualifies him to speak as a first-hand observer when discussing the relation of the *primates* to the rest of the animal kingdom, and that of the human species to the other members of the order of *primates*. Cuvier's distinction of *Bimana* and *Quadrumania* must, of course, be given up; but to do so is to raise a new difficulty. Man was placed at the head of the mammalia in virtue of his acquired rank as the master of the world and all that therein is; the *Quadrumania* were ranked next because of their unmistakable resemblance to man. But how is it possible to leave the *primates*, made up of man and the *Quadrumania*, at the head of the mammalia? This group is widely isolated from other orders—a fact of itself indicating great antiquity; and it is thought to have branched off from the great mammalian stock as far back as the Secondary period, for in the

## SCIENCE AND SOCIALISM.

Mr. A. R. Wallace ranks with Darwin, Huxley, and Tyndal among the brilliant literary scientists of our time—a group of writers whose influence over all classes of readers it would be difficult to over-estimate. Most of our great scientists have prudently abstained from extending their investigations into the domain of social and political philosophy. Mr. Wallace has not thought fit to follow their example, and he is so charming a writer that his readers will perhaps scarcely regret it, though most of them will probably attach little weight to his opinions on subjects foreign to those fields in which he has won his reputation. In any event, when a man of his standing takes the trouble to revise and enlarge the scattered essays and reviews of thirty-five years, and to give them to the world as a part of his published works, it is no ordinary case of collecting literary odds and ends; and his *STUDIES, SCIENTIFIC AND SOCIAL* (Macmillan, 18s.), have something of the character of an organic whole. Beginning with a few essays on geological subjects, entitled "Earth Studies," Mr. Wallace passes from the globe to its inhabitants. "Descriptive Zoology," "Plant-Distribution," "Animal-Distribution," "Theory of Evolution," and "Anthropology" make up the first volume.

Eocene we find lemurs and lemurine monkeys already specialized. At this time, according to Mr. Wallace, they were probably not separable from the insectivora, perhaps not even from the ancestral marsupials, among whom, alone among the mammals, we find hand-like feet with opposable thumbs. How, then, can the name (*Primates*), which claims for the group to which man belongs the first place in the animal creation, possibly be justified?

This relationship to the lowest of the mammalian tribes seems inconsistent with the place usually accorded to these animals at the head of the entire mammalian series, and opens up the question whether this is a real superiority or whether it depends on the obvious relationship to ourselves. If we could suppose a being gifted with high intelligence, but with a form totally unlike that of man, to have visited the earth before man existed in order to study the various forms of animal life that were found there, we can hardly think he would have placed the monkey tribe so high as we do. He would observe that their whole organization was specially adapted to an arboreal life, and this specialization would be rather against their claiming the first rank among terrestrial creatures. Neither in size, nor strength, nor beauty would they compare with many other forms, while in intelligence they would not surpass, even if they equalled, the horse, the elephant, or the beaver. The carnivora, as a whole, would certainly be held to surpass them in the exquisite perfection of their physical structure, while the flexible trunk of the elephant, combined with his vast strength and admirable sagacity, would probably gain for him the first rank in the animal creation.

It is provoking enough to know that we are first cousins to the monkeys without being told that we are second cousins to the ant-eaters and opossums. Ought we to abdicate the rank we have assumed, yield the primacy to the carnivora or the ruminants, and take a back seat from henceforth among the baboons and kangaroos?

The second volume brings us to Mr. Wallace's "social" articles. More properly they might have been entitled "socialistic," for here Mr. Wallace drops the character of an evolutionist and figures as a revolutionist. It is curious that he does not recognize the inconsistency in this attitude which an opponent might urge against him on the ground that, if human society be part of the scheme of nature, it cannot be exempt from the inexorable struggle for existence which rages everywhere else. We are reminded by his poem entitled "A Description of Javita," printed in his "Travels on the Amazon"—his earliest work—that his socialism is a survival of the generous enthusiasms of his youth. Almost fifty years have passed since that volume was published, and as many since Mr. Wallace was converted by Mr. Herbert Spencer's "Social Statics" to Land Nationalization. Mr. Spencer, we know, has disowned a doctrine which Mr. Wallace tauntingly describes as his "legitimate offspring." We turn with some curiosity to the group of essays entitled "Ethical," and are not greatly edified. One of them is entitled "Why Live a Moral Life?" Here is the answer which Mr. Wallace assures us is the only rational one for those who have not "obtained conviction of the reality of a future life through modern spiritualism":—

First, that we shall thereby generally secure the good opinion of the world at large, and more especially of the society in which we live; and that this good opinion counts for much, both as a factor in our happiness and in our material success. Secondly, that, in the long run, morality pays best; that it conduces to health, to peace of mind, to social advancement, and, at the same time, avoids all those risks to which immoral conduct, especially if it goes so far as criminality, renders us liable.

After remarking that these reasons in reality form only one—a fact which would have led most writers to remodel them in a single sentence—Mr. Wallace concedes that they are "of a somewhat low character." They are indeed, for they imply that man owes no duty to conscience, to the social state in which he lives, or the human nature which distinguishes him from the ape.