

*Studies, Scientific and Social.* By Alfred Russel Wallace. 2 vols. With Numerous Illustrations. (Macmillan & Co.)—As a rule, we are not favourably inclined to the republication of articles contributed to periodicals, but the present case is an important exception, and these essays, written by one of the most original thinkers of the last half-century, are well worthy of consideration. It was as far back as 1853 that Mr. Wallace first made his mark in scientific literature with an account of his explorations in the Amazon valley, and by its side the earliest of the papers in these volumes, 'How to Civilize Savages,' seems comparatively modern, although written in 1865, soon after the intelligent Zulu had perturbed the mind of Bishop Colenso about the animals in Noah's Ark. This, like an excellent article of much later date on 'White Men in the Tropics,' and others which need not be specified, belongs to the educational section of the essays; and some of these contain so much contentious matter that they must necessarily be passed by. For similar reasons, mere mention must suffice for political, ethical, and sociological problems, such as 'Coal as a National Trust,' 'A Representative House of Lords,' 'Interest-bearing Funds Injurious and Unjust' (with an amusing description of how Guernsey obtained a marketplace costing 4,000*l.* for *nothing!*), several articles on the land question, and 'A Counsel of Perfection for Sabbatarians.' Mr. Wallace has no mercy upon "Mr. Facing Both Ways," whom he loves to pin upon the horns of a dilemma by pushing an argument to its extremest logical sequence; but however much the impaled ones may writhe, they will not die—until compromises and errors die—and we fear that the author will remain as one crying in the wilderness.

This debatable matter is, however, confined to the second volume, and for our purpose it is more profitable to turn to the first, with its articles on natural science. One of these contains very strong arguments in favour of the permanence of the great oceanic basins, while the accounts of the Ice Age and its work place vividly before the reader the process of the transport of erratic blocks, as in the case of the Pierre à Bot, brought from the valley of the Rhone, across the main depression of Switzerland, to the southern slope of the Jura, near Neuchâtel. In the chapter on 'Monkeys: their Affinities and Distribution,' Mr. Wallace speaks with the wide personal knowledge acquired in the Amazon valley in the first instance, and subsequently among the humid forests of Borneo, where he studied the habits of the orang-utans. Alluding to the well-known fact that all the great apes, as well as many of the smaller monkeys, are very liable to lung disease in this country, and soon die in confinement, the author goes on to say that it is unfortunate that by none of the zoological societies of Europe have suitable arrangements been made for giving these animals pure air and exercise. He proceeds to sketch out the plan of a rather large and lofty conservatory with a few trees planted in it, an enclosure with loftier trees, a trench, and an unclimbable wall twelve feet high; but this, although ideal for the apes, has the drawback that the paying public would seldom be able to see the animals, except when these were impelled to descend by hunger. Otherwise, nothing could be better than the great palm-house at Kew. As regards pure air, the plan of keeping the chimpanzees and oranges behind plate-glass, and thus isolated from the atmosphere contaminated by the visitors, was begun at Hamburg some twenty-five years ago, with great success; and we believe that this is to be an essential feature in the ape-house shortly to

be constructed in the gardens of the Zoological Society of London. In describing the geographical distribution of monkeys, Mr. Wallace does not fail to point out that several species can support severe and long-continued cold, and that the present restriction of the family in general to the warmer regions of the earth is only recent. As palæontologists are aware, the fossilized remains of monkeys are found in France and even in England during the Pliocene period; while in the earlier Miocene several kinds, some of large size, closely allied to existing African and Asiatic species, lived in France, Germany, and Greece. That their remains are scanty is not remarkable, when the arboreal habits of the simians are considered. The high antiquity of the family cannot be doubted, for in the Eocene are found lemurs and lemurine monkeys already specialized; and at a remoter period "they were probably not separable from the insectivora, or (perhaps) from the ancestral marsupials," for "it is only among the opossums and some other marsupials that we again find hand-like feet with opposable thumbs, which are such a curious and constant feature of the monkey tribe." In view of this low relationship, the author inclines to the belief that in placing the monkeys at the head of the entire mammalian series we have been biassed by the too exclusive consideration of the man-like apes; and that even if these should prove to be our nearest existing relations, the gulf between us still remains immense. It would be interesting to learn Mr. Wallace's views upon the position of *Pithecanthropus* of Java. Passing over some shorter papers on the disguises of insects, and comparisons of English with American flowers and trees, we come to some important articles on the evolution and distribution of animals, a subject on which Mr. Wallace is at his best. Into the 'Method of Organic Evolution' want of space forbids us to enter, but this chapter (xvii.) deserves special attention, because in it the real meaning of Darwinism as distinct from Lamarckism is set forth with admirable clearness. 'New Guinea and its Inhabitants' is a synopsis of recent knowledge respecting this vast island, and among the illustrations are some small reproductions from Dr. R. B. Sharpe's coloured folio plates of the very remarkable species of birds of paradise made known during the last few years. In 1890, when the last edition of the 'Malay Archipelago' was issued, only thirty-seven species could be enumerated, but now fully fifty are recognized. The articles on 'The Affinities and Origin of the Australian and Polynesian Races' and 'The Polynesians and their Migrations' naturally hang together; the deductions of Mr. Wallace being that the Australians are low members of the Caucasian family, in which the New Zealanders and other Polynesians occupy a higher position; while the nearest allies of the Papuans are to be found in Southern and Equatorial Africa. It appears to be a remarkable fact that the use of the bow and arrows is almost universal among the true Papuans and the frizzly-haired races, while the Polynesians seem never to have possessed an indigenous weapon of this kind, although it is of unknown antiquity on all the great continents, and was employed in Egypt more than 6,000 years ago. Space precludes a more lengthy notice of this very interesting work, the value of which would have been increased by the bestowal of more care in reading the proofs. In a book which professes to be up to date it looks like slovenly work to find Sir John Murray of the Challenger alluded to as Mr., Sir J., and Dr. John in the same article; and Miss Isabella Bird has been Mrs. Bishop for some years.