

the biting Culicidæ. The breeding and artificial rearing of dragon-flies present almost insuperable difficulties, for, when the larval stage is attained, each individual would have to be isolated, because they are apt to devour each other when confined in a limited space. Irrespective of the question of breeding, an insect which produces but one brood a year, and lives but a few days in the imago condition, has little chance of seriously affecting a race whose numerous annual generations succumb only to the severest weather. In its natural condition the dragon-fly does not correspond sufficiently closely with the mosquito, either in time or space, to give it any real chance of effecting the destruction of the latter; its breeding-places are also more restricted, as it requires a volume of water which is constant for some little time, whereas the mosquito, with its quicker metamorphosis, can make use of any temporary puddle.

The conclusion to be drawn from all three essays is, that if a serious attempt is to be made to combat these most annoying insects, the means to be adopted with most chance of success lie rather in the direction of draining swamps, raising fish, and encouraging water-fowl in the infested ponds, and, where it would not be injurious, using crude oil, than in any efforts to increase the supply of dragon-flies.

Mrs. Aaron and Mr. Beutenmuller have appended to their essays useful lists of papers on the subject of their work; and the latter has added a preliminary list of the Odonata in the State of New York, and a very useful catalogue of the "described transformations of the Odonata of the world." The book is illustrated with several plates, which depict stages in the life-history of the insects in question, and various mechanical devices for attracting mosquitoes, by means of lamps, to an oily grave; and for spraying with petroleum the water in which they breed.

A. E. S.

OUR BOOK SHELF.

Materials for a Flora of the Malayan Peninsula. No. 3. By George King, M.D., F.R.S., &c. Reprinted from the Journal of the Asiatic Society of Bengal, Vol. LX. Part 2.

DR. KING'S third contribution towards a flora of the Malayan Peninsula contains the *Malvales*, and comprises almost as large a proportion of new species as the two preceding parts, but no new genus. The Malvaceæ number twenty-four species belonging to eleven genera; the Sterculiaceæ, forty-eight species belonging to twelve genera; and the Tiliaceæ, fifty-eight species belonging to nine genera. Although 25 per cent. of the species are new, there are only three of the first natural order and five of the second; the rest belong to the Tiliaceæ, of which nearly half are new. Nine out of ten species of *Pentace* were previously undescribed, and only two others are known. There are seven additional species of the characteristic genus *Elæocarpus*, out of a total of twenty-three. This is the largest number of any one genus, though *Sterculia* comes next with twenty-two species. It will be perceived that the new species are almost exclusively trees. The flora of Malacca and Cochin-china is exceedingly rich in the arboreous element; the number of new species described by Dr. King in his various monographs and by Dr. Pierre in his "Flore Forestière de la Cochinchine" being something enormous.

W. B. H.

Zoological Wall Pictures. Three Diagrams, each 32 inches by 42 inches. (London: S.P.C.K.)

The Animals of the World, arranged according to their Geographical Distribution. Third Edition, Revised and Re-drawn. Size, 58 inches square. (London: Moffatt and Paige.)

THE first named depict (1) fishes, as represented by the cod, eel, and herring; (2) chelonians, as exemplified by the common water tortoise and the Greek land tortoise, together with drawings of parts of the chelonian skeleton; (3) insect pests, in the *persona* of the Pine Bark and Colorado beetles, the larvæ of which are delineated. The diagrams are both bold and accurate, and good of their class.

The second named embodies an attempt to represent the distribution of the animals selected in latitudinal series. The plan, although a good one, is manifestly insufficient, inasmuch as by its means no provision can be made for overlap. However, for a bold wall diagram, the picture may be recommended. Its meaning is at once obvious; and a fact such as the occurrence of seals and whales at extreme latitudes, which at once arrests the attention, is sufficient in itself to arouse the spirit of inquiry in any active mind. In future editions the word "Some" might with advantage be substituted for the article "The" which heads the title.

Crozet's Voyage to Tasmania, New Zealand, the Ladrone Islands, and the Philippines, in the Years 1771-72. Translated by H. Ling Roth. Illustrated. (London: Truslove and Shirley, 1891.)

IN 1769 a Tahitian was brought to Europe by Bougainville as "a human curiosity." Afterwards he was sent to the Mauritius, the Governor of which was instructed to forward him to his destination. The task of restoring him to his native land was undertaken by Marion du Fresne, who was then a well-to-do resident in the Île de France; and thus originated the expedition the story of which is recorded in the present volume. The party started in two vessels, and Marion proposed, in the course of the voyage, to do much exploring work—a kind of enterprise for which he seems to have been well fitted, as he had been a distinguished officer of the French navy. Unhappily, some members of the expedition, including Marion himself, were massacred by the Maories. The voyage, however, was continued, and in 1783 an account of it was published which had been compiled and edited by the Abbé Rochon, the well-known traveller, from the log of M. Crozet, who, after Marion's death, commanded one of his two ships. It is this account which Mr. Ling Roth has translated. The work will be read with interest by students of the history of geographical discovery, and a good many of M. Crozet's statements about savage life have considerable value from the point of view of the ethnographer and the anthropologist. A preface, and a brief reference to the literature of New Zealand, are contributed by Mr. J. R. Boosé, Librarian of the Colonial Institute; and the volume contains, besides maps, very good illustrations of some works of Maori art.

Livingstone and the Exploration of Central Africa. By H. H. Johnston, C.B., F.R.G.S., &c. (London: Philip and Son, 1891.)

THIS volume ranks with the best of the series to which it belongs—"The World's Great Explorers and Explorations." Mr. Johnston realizes fully the splendour of Livingstone's achievements, and has succeeded admirably in bringing out their significance in the history of African exploration. He begins with two excellent general chapters dealing with the "natural history" and the "human history" of Central Africa; and afterwards he gives vivid accounts of all the various regions traversed by his hero. Thus the reader is enabled to form his own opinion as to the value