

## WALLACE ON THE MALAY ARCHIPELAGO.\*

SINCE Mr. Wallace's return to this country, six years ago, the work now issued has been looked for with interest by naturalists, ethnologists, and lovers of first-class narratives of travel in strange lands. The preface to the volumes now issued explains the delay, which has been partly occasioned by ill-health, and partly by the enormous mass of material which Mr. Wallace had collected, and required time to study. Three thousand skins of birds, representing about one thousand species; at least twenty thousand beetles and butterflies, of about seven thousand species; besides quadrupeds and land-shells—these, indeed, constituted a collection requiring no ordinary amount of labour to arrange, classify, and name; and yet they only formed a portion of the treasures our industrious traveller brought together, and which he reserved for his own use. The total quantity amounted to 125,660 specimens, and few naturalists have been equally successful in discovering new forms, or, what is much more important, in throwing light upon the great question of the origin of species and the tendencies to variation, and the various geographical and geological problems concerning the distribution of life.

Mr. Wallace offers his work to the public as a "mere sketch" of a great subject; but it is the sketch of a master-hand, full of information, suggestion, and thought. Much of it being copied from diaries kept on the spot, it has the freshness that constitutes the charm of good personal narrative, and the author has wisely said most about things and regions least known to former investigators. He divides the Archipelago into five groups of islands—the Indo-Malay Islands (Borneo, Java, etc.); the Timor group; Celebes, with the Sula Islands and Boutan; the Molluccan group (Bouru, etc.); and the Papuan group (the Aru Islands, etc., etc.).

\* "The Malay Archipelago, the Land of the Orang-utan and the Bird of Paradise: a Narrative of Travel, with Studies of Men and Nature." By Alfred Russel Wallace, author of "Travels on the Amazon and Rio Negro," "Palm Trees of the Amazon," etc. 2 vols. Macmillan and Co.

Mr. Wallace confirms Mr. Earl's division of the Malay Archipelago into an Australian and an Asiatic region, which he names respectively Indo and Austro-Malayan, but he differs from that gentleman in many important points. Borneo, with the islands north and west of it, he places in the first; while Celebes, and eastwards to New Guinea inclusive, is assigned to the second.

The sea which divides Java, Sumatra, and Borneo, "is so shallow that ships can anchor in any part of it, since it rarely exceeds forty fathoms in depth, and if we go as far as the line of a hundred fathoms, we shall include the Phillipine Islands, and Bali, east of Java." The active volcanic character of this district, and the shallowness of the sea, indicate a probability that the subsidence by which that sea was formed is geologically recent, and Mr. Wallace finds their natural history conformable to the notion of the great islands having been connected at no very distant period with the mainland.

"The elephant and tapir of Sumatra and Borneo, and the rhinoceros of Sumatra, and the allied species of Java, and the wild cattle of Borneo, and the kind long supposed to be peculiar to Java, are now all known to inhabit some part or other of Southern Asia." Birds and insects exhibit the same resemblances, and the general conclusion is that the Asiatic continent extended far beyond its present limits at a very recent geological epoch. Mr. Wallace regards the enormous outpourings of matter from the volcanoes of Sumatra and Java as the proximate cause of the depression which has taken place. Celebes and the islands on the East "exhibit almost as close a resemblance to Australia and New Guinea, as the Western Islands do to Asia."

It is very remarkable that the differences in the fauna of these islands seem to have been determined by the geographical and geological changes which isolated them from two distinct regions of mainland, and that the actual state of climate, etc., has had little to do with the matter. Thus, though Borneo and New Guinea are physically alike, they differ widely in a zoological point of view, and "Australia with its dry winds, its stony deserts, and its temperate climate, yet produces birds and quadrupeds, which are closely related to those inhabiting the hot, damp, luxurious forests which everywhere clothe the plains and mountains of New Guinea." Mr. Wallace's residence amongst the Malays and Papuans, led him to the conclusion that they are distinct races, differing radically in physical, mental, and moral characters, and divided approximately

by the same boundaries which separate the zoological regions just named.

We do not propose to follow Mr. Wallace's footsteps in detail, but merely to dip here and there into his book, sufficiently to lay before our readers many interesting facts, and lead all who can get it to the work itself. In Borneo he devoted much time to watching the habits and procuring specimens of the ourang-utan. In one of his expeditions he acquired an ourang-utan baby, which he succeeded for some time in rearing by hand, and, however shocking it may appear to those who look down upon their "poor relations," the little thing behaved amazingly like a human infant of the same age. It would lie helplessly upon its back, rolling lazily, and stretching out its hands, scarcely able to guide its fingers to any definite object, while a little monkey, of the same age, was full of juvenile vigour, activity, and curiosity. When handled gently and nursed, the ourang-utan was quiet, if neglected it screamed. It soon learned to enjoy being washed, and became a pleasant pet, but unfortunately it perished of intermittent fever at the age of three months.

While in Borneo Mr. Wallace had an opportunity of tasting the durian, that curious fruit which repels by its nauseous odour of rotten onions, and finally delights all who are adventurous enough to eat it. We are told that it is about the size of a cocoa-nut, covered with strong short spines, and having an extremely thick, tough rind. It grows high upon tall trees, and falls when ripe, inflicting a terrible wound upon any one who happens to be walking below, and giving its victim, as Mr. Wallace explains, a hint that the arrangements of the vegetable world were not made with exclusive reference to the convenience of man—a lesson we are willing to learn without requiring the spikes of a durian to impress it upon our heads. The fruit is split open by a strong knife, and the cream-coloured pulp which combines the flavour of "custard, almonds, cream, cheese, onion-sauce, brown sherry," and a few other things eagerly devoured.

Many readers will be much astonished at Mr. Wallace's account of the aspect of equatorial forests. Flowers, he tells us, are scarce, and only at rare intervals did he meet with anything striking. He says, when speaking of the Aru islands, "I have visited five distinct localities in the island; I have wandered daily in the forests; I have passed along upwards of a hundred miles of coast and river in six months, much of it in very fine weather, and till just as I was about to leave I never saw a single plant of striking brilliancy or

beauty; hardly a shrub equal to a hawthorn, or a climber equal to a honeysuckle'. . . My whole experience in the equatorial regions of the West and the East has convinced me that in the most luxuriant part of the tropics, flowers are less abundant, on the average less showy, and are far less effective in adding colour to the landscape than in temperate climates. I have never seen in the tropics such brilliant masses of colour as our England can show in her furze-clad commons, her heathery mountain sides, her glades of wild hyacinths, her fields of poppies, her meadows of buttercups and orchises—carpets of yellow, purple, azure blue, and fiery crimson, which the tropics can rarely exhibit . . . In the regions of the equator a sombre green clothes universal nature. You may journey for hours, and even for days, and meet with nothing to break the monotony. Flowers are everywhere rare, and anything at all striking is only to be met with at very distant intervals." Equatorial fruits would prove to many as disappointing as the flowers. Not that splendid species do not exist, but they are not common except under cultivation, and in the Archipelago few wild fruits were found to compare with our own blackberries and nuts.

In Sumatra Mr. Wallace met with a curious instance of that mimicry of form which formed the subject of a paper in the "Intellectual Observer," and on which Mr. Bates has thrown so much light. It appears that the females of the butterfly (*Papilio Memnon*) occur in two forms—one resembling the male, and the other having spoon-shaped tails to its wings, just like the *Papilio Cöon*.

The colouring of the tailed females is like that of the *P. Cöon*, and the use of this imitative arrangement appears to be to secure immunity from the attacks of birds who are in the habit of assailing *P. Memnon*, and leaving *P. Cöon* alone. "But," says Mr. Wallace, "the most curious fact connected with these distinct forms is, that they are both the offspring of either form. A single brood of larvæ were bred in Java by a Dutch entomologist, and produced males, as well as tailed and tailless females, and there is reason to believe that this is always the case, and that forms intermediate in character never occur. To illustrate these phenomena, let us suppose a roaming Englishman, in some remote island, to have two wives—one, a black-haired, red-skinned Indian, the other, a woolly-headed, sooty-skinned negress, and that instead of the children being mulattoes of brown or dusky tints, mingling the characters of two parents in varying degrees, all the boys should be as fair-skinned and blue-eyed as their father, while the girls should altogether resemble their mothers. This would be thought strange

enough ; but the case of these butterflies is yet more extraordinary, for each mother is capable not only of producing male offspring like the father, and female like herself, but also other females like her fellow-wife, and altogether different from herself."

In the Moluccas, Mr. Wallace first discovered undoubted cases of this "mimicry" in birds ; and in the island of Bouru, he found a honey-sucker and an oriole, much alike in appearance. The honey-suckers have the usual colouring of their family, while the tints of the oriole, differ from theirs, and the reason seems to be that, by so doing, they are taken by their enemies for creatures stronger and more pugnacious than themselves.

Mr. Wallace's pages abound in materials for correcting the errors of ordinary writers on natural history, and especially of that school which pretends to know exactly why everything is done. He comments on the common theory that the habits and instincts of animals are fixed points, and that their structure and organization is specially adapted thereto, and he shows that both habits and instincts must be studied in reference to the origin and history of the creatures exhibiting them.

Thus in Celebes a bird called the Maleo lays its eggs in hot black sand, where they are hatched by solar heat. The parents take no trouble about their young. As soon as they are hatched they are able to run off to the forest and take care of themselves, and they can fly a little by the next day. The nearest allies of the Maleo, the Magapodii and Talegalli heap up the earth in huge mounds in which they bury their eggs, but the foot of the Maleo is not adapted to this sort of work, though well fitted to shovel up sand. The Magapodii and bush turkeys depart from the usual habit of birds of their class, because their eggs are so large that about thirteen days are required before successive eggs can be matured. Thus the creatures are precluded from the ordinary process of laying many eggs in quick succession, and sitting upon the lot. Their habits result from their structure, and the origin of that structure must be sought by inquiries into the variations from previous structure which led to it.

The human race appears never to make much progress unless its facilities and difficulties are duly proportioned. If the means of subsistence are easily obtained and little shelter is required, laziness and absence of progress are the invariable results, so that too much bounty of nature is worse than too little. In Ceram, for example, the sago palm feeds the people ; with scarcely any trouble, "a good-sized tree will produce thirty tomans, or bundles of thirty pounds

each, and each toman will make sixty cakes of three to the pound. Two of these cakes are as much as a man can eat at one meal, and five are considered a full day's allowance, so that reckoning a tree to produce 1800 cakes, it will supply a man with food for a whole year," and a tree can be worked up in ten days by one man, and a woman can bake the lot in ten days more. When the tree has to be bought it costs about seven and sixpence, and labour is paid for at fivepence a day; so that a year's food represents only thirty-eight days' work.

In many regions the banana, or some other plant affords equal facilities for indolence; and while we are overtoiled the natives of many countries are spoilt for want of stimulus to exertions that would do them good. With all our civilization, we have not yet managed to produce a *class* that will work usefully if it can help it, though we have many individuals—types of the higher state to come—who pass lives of utility from sheer love of benefiting their race.

After stopping in the large islands, Mr. Wallace made an adventurous voyage in a native prau, manned by fifty natives of different races from Macassar, to the islands of Aru, which he tells us no European had previously investigated. They lie in a shallow sea, near New Guinea. He enjoyed the voyage very much, and preferred his simple deck cabin to the richly gilt saloon of first-class steamers. The half-savage crew behaved very well, and the point of destination was safely reached. To regulate the time on board the prau, a simple contrivance was resorted to; a half shell of a cocoa-nut, with a small hole bored in the bottom of it, was set floating in a bucket half-full of water. A fine thread of water squirts up through the hole, and finally fills and sinks the shell. The hole is of such a size that this takes one hour, and comparison with a watch showed it very nearly correct. In the Aru islands Mr. Wallace obtained a specimen of the King Bird of Paradise, one of the special objects of his search. He also obtained the Great Black Cockatoo, remarkable for its mode of getting at the kernel of the Canary nut, which is somewhat triangular, quite smooth, and excessively hard, so that a heavy hammer is required to break it. The bird takes one of these nuts edgewise in its bill, and by a sawing motion of its sharp under mandible works a notch in it. "This done, it takes hold of the nut with its foot, and biting off a piece of leaf retains it in the deep notch of the upper mandible, and again seizing the nut, which is prevented from slipping by the elastic tissue of the leaf, fixes the edge of the lower mandible in the notch, and by a powerful nip breaks off a piece of the shell. Again taking the nut in its claws,

it inserts the very long and sharp point of the bill, and picks out the kernel, which is seized hold of, morsel by morsel by the extensible tongue." This is a truly skilled process, of which the use made of the bit of the elastic leaf is not the least remarkable feature.

The Aru islanders were at first much puzzled to know what Mr. Wallace went there for. Fine weather attended him, which they ascribed to his magical powers, and they came to the conclusion that he would bring to life again all the dead creatures which he packed up to carry away. Long, long ago, some wonderful people had visited their islands, taken prisoners, sunk them in a net of cane in the water till they were drowned, and the next day pulled them up again and brought them to life.

Mr. Wallace had, in the course of his travels, many opportunities of becoming acquainted with the Dutch mode of treating their colonies, of which he speaks in terms that contrast very strongly with the usual abuse to which they are subjected. He regards their spice monopoly as on the whole beneficial to the natives, who are usually represented as victims of robbery and cruelty. He regards it not only as an unobjectionable method of raising taxation and making profit, but as preserving the natives from many temptations to neglect other industries, which would arise from an unrestricted intercourse with European traders. It is certainly necessary to hear both sides on this question, and if we blame the Dutch we must remember how very little success we have hitherto achieved in dealing with any savage race.

Without exaggerating the merits of savage and semi-civilized life, Mr. Wallace compares it with our much-vaunted civilization in a way which, however uncomplimentary, is to a great extent true. "Compared with our wondrous progress in physical science, and its practical applications, our system of government, of administering justice, of national education, and our whole social and moral organization, remains in a state of barbarism." This is his conclusion, and he enforces it by adding that "the wealth and knowledge of the few do not constitute civilization." He tells us that our failure results "mainly from our neglect to train and develop more thoroughly the sympathetic feelings and moral faculties of our nature, and to allow them a larger share of influence in our legislation, our commerce, and our whole social organization;" and until we do so "we shall never, as regards the whole community, attain to any real or important superiority over the better class of savages." Such remarks suggest a wide range of reflection. We cannot

develop sympathetic feelings to any extent under any conditions. Our success and our failure in solving the great problem of human progress, both depend upon a great variety of circumstances. Our entire system, political, social, and economical, is tending towards changes difficult to foresee. It may be that we are moving under intelligent impulse towards a higher stage, but too often we seem only drifting, and this character will not be got rid of until there is a much more general agreement as to the nature of the goal it is desirable to reach.

We have given only a slight idea of the interesting contents of Mr. Wallace's work, and we ought to add that it is well illustrated by numerous plates and cuts.

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