



## ANIMAL AND PLANT LIFE OF THE EAST INDIES

BY

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The most interesting feature of the natural history of the Malayan Archipelago is the distribution of the various animal and plant forms that inhabit it, and what they tell us of the past relations between Asia and Australia. As is generally known, Australia has a very different mammalian fauna from the rest of the world, consisting, as it does, almost entirely of marsupials, with the exception of the American opossums not found elsewhere in the world, and including the even more primitive creatures known as echidna and the duck-billed platypus. Asia, on the other hand, has only what are known as placental mammals. Between the two continents lies the enormous archipelago with which we are dealing, and, as might be expected, in this region a mixture of the two types of fauna occurs.

But the interesting and significant part is that in each case there comes a boundary line sharply defining the limits of the particular fauna. Thus an imaginary line which runs in a roughly north and south direction to the east of Palawan, Borneo and Bali, dividing these islands from those to their east, and which was first defined by the great naturalist Alfred Russell Wallace, a contemporary of Charles Darwin, marks the western limits of the Australian faunal types; while a second line, also running roughly in a north and south direction, and lying to the west of the Aru Islands, New Guinea and the northern islands of the Moluccas, was later defined by Weber, who showed that to the east of it no Asiatic forms occur. It is between these two lines, known, respectively, as the "Wallace Line" and the "Weber Line" that the mixture of types of both the Asiatic and Australian faunas occur. This area has been given the name of "Wallacea" to commemorate the work done by Wallace in these regions.

If the foregoing facts mean anything, it is that Australia and Asia must at one time have been connected, but that they have been separated for a very long time, how long it is not easy to say, though it must have been very early in the evolutionary history of the mammals.

and small, including several flying species, and rats and mice of various kinds abound.

In a restricted area in West Java a hare (*Lepus nigricollis*) occurs, the only member in these parts of the great order *Lagormopha*, so characteristic of more northerly climes.

The scaled anteater, or pangolin (*Manis javanica*) also occurs in these islands; while in the surrounding seas the strange syrenian known as the dugong (*Halicore dugong*) is to be found.

In Borneo and Sumatra the small two-horned rhinoceros (*Rhinoceros sumatrensis*) occurs in the jungles and forests, while its larger cousin, the one-horned rhinoceros (*R. sondaicus*) ranges the wilder parts of these two islands and also Java. The elephant still exists in a wild state in Sumatra, where also the Malayan tapir is to be found. Other big-game animals are the banteng (*Bos banteng*), well known to sportsmen in Indo-China, where it is called the tsain, various species of sambur, muntjac, mouse and other deer, two species of wild pig, the serow (*Nemorhoedus sumatrensis*) which is only found in Sumatra, the dwarf buffalo, or anoa, found only in Celebes, and the peculiar pig known as the babirusa, also confined to Celebes.

Various cetaceans, such as porpoises, dolphins, pilot whales and the like, occur in the surrounding seas, while occasional specimens of such large species as the great blue whale (*Balaenoptera musculus*) become stranded on the shore.

All of the foregoing mammals may definitely be classed as Asiatic in type. We now come to the forms typical of Australia, the marsupials, which have developed to such an extraordinary degree in this great continent, paralleling most of the orders included in the placental mammals of other parts of the world. Thus we have marsupial equivalents to carnivores, mice, rats, moles, squirrels, bears, rabbits and even ungulates, if we may consider the kangaroos as filling this rôle.

Although by no means all the Australian marsupials extend into our region, it is surprising how many do. Of the kangaroo-like forms Aru Island contains a wallaby (*Macropus brunii*), while other closely related forms such as Müller's kangaroo (*Dorcopsis mülleri*) and the tree-kangaroos (*Dendrolagus*) occur in New Guinea. The islands are well represented by phalangers, of which the widely distributed spotted cuscus (*Phalanger maculatus*) and the black cuscus (*P. ursinus*) of Celebes may be mentioned, as well as the flying phalangers (*Petaurus*), the dormouse phalanger (*Dromica*) and the pen-tailed phalanger (*Distoechurus*), all of New Guinea. This island also harbours representatives of the bandicoots (*Perameles*) and the cat-like dasyures (*Dasyurus*), while the peculiar *Phascogale* occurs here and in Aru Island.

A final link in the way of mammals between our region and Australia is formed by two members of the primitive toothless, egg-laying *Monotremata*, to which belong the echidnas and the duck-billed platypus. The latter is confined to certain parts of Australia and to Tasmania, but the so-called Australian anteater (*Echidna aculeata*) ranges into New Guinea, where also the closely related *Proechidna bruijnii* occurs.

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