

amara, *Ximenia americana*, *Eugenia*, *Psychotria*, *Premna*? *Cassytha filiformis*, Laurineæ various (including *Litsea*), *Myristica*, *Phyllanthus*, *Ficus*, *Gnetum*, *Clinogyne grandis*, *Areca*, *Kentia*, and *Orania*.

This is a very small list, and is merely offered as an example of what is done by birds. As Dr Beccari, Mr Moseley, and others have pointed out, the fruit-pigeons are able to swallow much larger fruits than would seem possible; and the cassowaries of New Guinea, on the authority of the former, swallow the fruits of *Orania aruensis*, which are two inches and a half in diameter.

EXAMPLE OF AN ISLAND WHICH HAS BEEN LARGELY FURNISHED WITH PLANTS BY OCEANIC CURRENTS AND BIRDS.

In his notes on the vegetation of the Admiralty Islands (reproduced in Part III., pp. 227–231), Mr Moseley gives some particulars of the means by which newly raised coral islands become stocked with plants, and the kinds of trees which successively follow each other. Dr Guppy, too (see Part III., p. 309), and Dr Beccari (*loc. cit.*, p. 312), contribute some interesting facts in relation to the process; and with the evidence we have collected from other sources before us, there is no difficulty in drawing a complete picture of the various phases in the production of an insular flora, such as that of the Arrou or Admiralty Islands, for example. The lists given above might be extended considerably on the assumption that if such and such plants owe their present distribution to these agencies, numerous other plants bearing similar seeds or fruits were dispersed in the same way; but there is no need for speculation, as the evidence is sufficient to account for the vegetation of most of the islands, except those placed in our first category (p. 6), and characterised by having a large endemic element including generic types. From the positions of these islands, it is improbable that birds have effected much, if anything, in stocking them with plants; and the littoral element is almost entirely wanting, in consequence of the nature of the shores being such as to render it impossible for plants to establish themselves thereon.

Taking a very small selection of flowering plants, whose seeds are transported by oceanic currents and birds, we may trace the gradual invasion of an island by herbs, shrubs, and trees. Actual evidence of the germination of drifted grass seeds is wanting, and most of the drift-seeds that certainly retain their vitality, as explained before, are either exalbuminous or have oily albumen; but Darwin's experiments proved that many seeds having farinaceous albumen—those of the oat, for example, will bear long immersion in sea-water without injury to their germinative power. Hence we may assume that the seeds of many almost ubiquitous sand-binding grasses may be reckoned among those which are cast ashore in a vital condition; and we may also assume that these grasses are among the very first flowering plants to obtain a footing. Other herbaceous plants met