they will doubtless be recognised when Dr Guppy's dried plants from the same islands are compared. There are two species of *Ficus*, a *Psychotria?* a *Eugenia*, a *Premna?* and an *Areca*.

CONCLUDING REMARKS ON THE DISPERSAL OF PLANTS BY OCEANIC CURRENTS AND BIRDS.

It is hoped that the foregoing collection of facts bearing upon the dissemination of plants by oceanic currents and birds will sufficiently interest and stimulate those persons who have opportunities for observing the effects of these agencies in various parts of the world to observe and record the results of their observations. There can be no question that a large number of trees, shrubs, and herbs, many of them not essentially littoral, have been transported to distant countries by the agency of the sea, and that the area of many plants thus conveyed from place to place is only limited by climate and the nature of the shore upon which their seeds may be cast. That birds are also great seed-carriers, and assist largely in local diffusion, is equally certain, but facts are wanting to establish their reputed influence in materially widening the areas of species. Darwin fully discusses[1] the probabilities and possibilities of the occasional transport of seeds long distances by birds in various ways. "Almost every year," he states, "one or two land-birds are blown across the whole Atlantic Ocean, from North America to the western shores of Ireland and England," and he points out the possibility of small seeds being by this means conveyed long distances in mud sticking to the claws or other parts of the bird. He expresses the opinion that even if the occurrence be very rare, birds do convey seeds to vast distances, especially those of water and marsh plants. In nine grains of earth taken from the leg of a woodcock was a seed of a common rush (*Juncus bufonius*), which on trial germinated; while from the seeds contained in a ball of earth taken from the leg of a wounded partridge, no fewer than eighty-two plants, belonging to five species, were raised. In order to ascertain the probabilities of seeds being contained in the mud on the edge of a pond, three table-spoonfuls were taken from different points. "This mud weighed when dry only $6\frac{3}{4}$ ounces; I kept it covered up in my study for six months, pulling up and counting each plant as it grew. The plants were of many kinds, and were altogether 537 in number; and yet the viscid mud was all contained in a breakfast cup!"

In relation to the dispersion of plants by birds and oceanic currents Dr Beccari's[2] observations on the flora of the Arrou Islands have a special interest. He says he had no great hopes of discovering zoological novelties, but he was not prepared for the meagre flora that he found. Four months' continuous exploration yielded only between three and four hundred species of plants. Such poverty, he adds, I could not have imagined.

[1] Origin of Species, ed. i., pp. 363 and 386.

[2] Nuovo Giornale Botanico Italiano, v., 1873, p. 330.