

observation and even experiment would be essential ; and this was naturally out of the question owing to the short period of time passed at each reef-station by the Challenger.

In the compilation of the lists of the species which are known to occur at each of the Challenger reef-stations, published localities have been alone considered, and with this limitation it is believed that the lists are fairly complete as regards the more definitely marked reef-building forms. Considerable difficulty has been experienced, however, in deciding between various simple forms, which, although not among the usually recognised reef-builders, are yet either shallow-water forms or forms from the comparatively deeper waters of the reef-areas.

In the case of many of the species described or recorded by the older authors, though it is certain that many of them must occur at one or more of the stations named, yet it was impossible to incorporate them owing to the want of a definite record of the locality ; while, on the other hand, in many cases it seems to me equally impossible to be certain, either from the figures or from the descriptions, what species were really intended.

Though the lists may possibly be found incomplete, yet it must be pointed out, particularly to those who have not full opportunity for consulting the whole literature on the subject, that the simple record of a species is not always sufficient for its location, that often a knowledge of its history is required. Of this, a case in point may be taken from the record given by Dana of the occurrence of *Fungia echinata*, Pallas, in the Fiji Islands. Specimens from the East Indies (Singapore) and from the Fiji Islands were referred to this species by Dana ; but it has been shown by Milne-Edwards and Haime that the specimens were not referable to *Fungia echinata*, but to a new species *Fungia danæ*, which they also record from Manilla as well as from the East Indies and the Fiji Islands. Following on this, however, it has been shown by Verrill that, while the original Singapore specimens of Dana are forms of *Fungia danæ*, the Fiji specimens are distinct and belong to a new species, *Fungia lacera* ; so that while lists from Dana or from Milne-Edwards and Haime would include *Fungia echinata* or *Fungia danæ* from the Fiji Islands, the fact is that neither of these species is as yet recorded from that locality, but only the *Fungia lacera*.

The detailed list of the species now known from each locality has been given, with the hope not only that it will prove of use to those who may be working at the Fauna of the island or groups of islands represented, but more especially that it may serve as a basis for, or as a first instalment to, a knowledge of the distribution of the Reef-Corals.

Little or no attempt has been made to generalize from the facts at hand as to the relations of the Fauna of the various groups, since it was impossible not to recognise how incomplete was the knowledge of them that we at present possess. Nor does it seem possible that such generalizations can safely be made until at least such examinations of the Coral fauna of the chief groups of the Pacific and Indian Oceans have been made as have been accomplished in the case of the Corals of the Red Sea.