CHALLENGER REPORTS.

THE number of species collected by the Challenger in the group Marseniadae was but three, two of which, however, belong to a new genus. Dr. Rudolph Bergh, who is monographing this family, has not only given very full accounts of the anatomy of the species collected, but has added to them a general history of the nomenclature of the family, a list of the known genera and species, notes on their geographical distribution, and other matter of importance. He regards the group as most nearly related to the Velutinidae, and even suggests that a more thorough knowledge of both families may render it necessary to consolidate them.

The report on the Scaphopoda (tooth-shells) and Gasteropoda, by Rev. Robert Boog Watson, exhibits a stupendous amount of labor. It is accompanied by an appendix in which the Marquis de Folin reports on the Caecidae, a group of minute and interesting shells. The collection included some 1,300 recognizable species, new and old, with some 400 undeterminable fragments or worn specimens. Shore-collections furnished 86 species, of which 7 were new. Dredging-stations to 400 fathoms yielded 604 old species and 405 new ones. From forty-one stations between 2,650 and 400 fathoms, 89 known and 135 previously unknown species were obtained. The greatest depth at which any gastropod was secured was 2,650 fathoms, at station 325. Here a Stilifer, parasitic on some echinoderm, was obtained. Basilissa, Dentalium, and Trochus were found in 1,900 fathoms; Dentalium, Cithna, and various Pleurotomas were found in between 2,000 and 2,500 fathoms; and the large and interesting Guivillea alabastrina was dredged off the Crozets in 1,600 fathoms. Oöcorys, Fusus, Cadulus, Seguenzia, Cylichna, and Actaeon are among the genera which presented themselves most frequently from the abysses. Leaving the shallow waters out of account, perhaps the richest haul of the voyage for the conchologists was that in 390 fathoms, off Culebra Island in the West Indies. This produced about 150 species, of which only about ten per cent were previously known to science. The average number of species of mollusks collected at a station was less than twelve. Mr. Watson's introduction is short. He lays stress on the importance to molluscan life of temperature; to a less degree, of depth; great differences in these respects operating as barriers against dispersion. He notes the importance of time in affording opportunities for distribution; so that species which are found fossil and still exist, being presumably ancient, may be expected to occur over wide geographical areas. Where barriers of depth and temperature do not check distribution, the species tend to become universal, and in some cases have attained universal distribution. Finally, Mr. Watson affirms that even in the oldest and most widely distributed forms there is no trace of essential, lasting, and progressive change. This assertion may well be accepted, for it is precisely among such ancient and universally distributed forms that we should expect those evidences of inflexibility which have been recognized as characteristic of certain species by naturalists from Darwin down. It is the local and restricted species which should be studied for evidences of change. Where each pond has its form of Limnaea, and each tree its Clausilia or its Achatinella, there should evidences of change or adaptation be most easily recognized. Every one who has occasion to deal with deep-sea mollusks will find the learned, painstaking, voluminous, and profusely illustrated report of Mr. Watson an absolute necessity; and for other malacologists it will be, not a mine, but rather a warehouse of elaborated and systematized information.

Report of the scientific results of the voyage of the Challenger during 1873-76. Vol. xv.: Zoölogy. London, *Government*, 1886. f°.

The number of chitons collected by the expedition was small, as they are chiefly littoral in habit. There are reported on by Professor A. C. Haddon some thirty species of fifteen genera, of which seven were previously undescribed, and others, though described, had not been figured. The really deep-sea chitons all belong to the genus Leptochiton, and, judging by their sculpture, are nearly related forms. Leptochiton Belknapi, Dall, was dredged in over one thousand fathoms near the Aleutian Islands by the U.S.S. Tuscarora, and by the Challenger in about the same depth off the Philippine Islands. An allied species (L. benthus, Had.) was found in twenty-three hundred fathoms in the North Pacific, nine hundred miles north of the Sandwich Islands. It is so far the most abyssal chiton known. In all these cases the temperature was low, not exceeding 37° F. The genus, as one might expect, appears in shallower water toward the poles. Professor Haddon gives a synopsis of Carpenter's classification, and of the genera of Leptoidea. In his discussion of the species, he gives a valuable *résumé* of the status of the genera, and proves beyond question that the genus generally known as Chitonellus must be referred to Cryptoplax, Blainville, the various subdivisions resting upon insufficient or erroneous figures and observations. The plates to Professor Haddon's memoir are particularly excellent, and the paper marks a distinct step in advance in our knowledge of this very interesting group.