

neglecting the somewhat higher temperatures found off the entrances to the Red Sea and the Mediterranean, but the temperatures at 1000 metres usually vary only from 4° to 6° C. The habitat of *Cyclothone microdon* is below 1000 metres, the temperatures generally varying between 3° and 6° C., and the wide range of this species must evidently be directly connected with the wide areas occupied by these temperatures. On the other hand, the area of distribution of *C. signata* at about 500 metres shows great differences in temperature in different parts of the ocean. In the Indian and Atlantic Oceans, where *C. signata* is found, temperatures at this depth are generally above 10° C., sometimes even above 15° C. In the sea between Newfoundland and Iceland, as well as south of lat. 40° S., temperatures are below 5° C., and in these localities *C. signata* is absent.

These facts, especially the conditions touching the wide distribution of the bathypelagic *C. microdon*, assume more general importance considering that we found many bathypelagic species in the North Atlantic, which have been taken in the deep water of other oceans. As instances of such forms I may mention the widely distributed medusæ *Atolla* and *Periphylla*, which were taken by us in the Northern Atlantic at nearly all the localities and depths where *C. microdon* and *C. signata* were taken. The genus *Gigantocypris*, taken at three stations in our southern and at six stations in our northern section, had previously been captured by the "Valdivia" in the Indian Ocean. Three species of squids, taken by us in deep hauls in the North Atlantic, were caught by the "Valdivia" in the Indian Ocean, viz. *Calliteuthis reversa*, *Mastigoteuthis flammea*, *Toxuma belone*. Bathypelagic fishes common to both these oceans are: *Malacosteus indicus*, *Cyema atrum*, *Melamphaes mizolepis*, *Cetomimus storeri*, *Melanocetus krechi*, *Ceratius couesi*, besides *Accratius macrorhinus indicus*. These squids and fishes are, however, represented by very few specimens, in some cases only one from each ocean. The fact that we caught several new species of the family Ceratiidæ, as well as such interesting forms as *Gastrostomus bairdii* and *Gonostoma grande*, proves that a great field of research is still open to systematic zoologists. The chart (Fig. 477) shows the distribution of *Gonostoma grande*.

All the forms mentioned live, as far as we know, always in deep water, except perhaps the early stages, which in some cases occur closer to the surface, but certain cold-water

Bathypelagic forms.