

1 sponge, 1 antipatharian, 6 actinians, 2 corals, 1 hydroid colony, 2 crinoids, 3 starfish, 1 sea-urchin, 5 holothurians, many worms, 7 or 8 mussels, and a brachiopod.

This is, as far as I have been able to ascertain, the richest haul in depths exceeding 2000 fathoms on record, but nevertheless the impression created by the results of the many deep-sea hauls of the "Challenger" is that animal life is poorly developed in the abyssal region.

During the cruise of the "Michael Sars" I therefore considered it an interesting object to ascertain if our large otter trawl could catch more, and possibly larger, animals on the abyssal plain. As stated in Chapter III., technical success attended our attempts at great depths, and the catches were certainly somewhat larger than those previously taken in the North Atlantic, but nevertheless they were very poor, as shown by the following list:—

"Michael Sars" hauls in the deep water of the North Atlantic.

Station 10. Bay of Biscay, 2567 fathoms (4700 metres). Trawl dragged for five hours gave: Some sponges, 3 actinians, some holothurians (*Elpidia*), 2 starfish (*Frugella*, *Dorigona*), a few worms, ascidians, and bryozoa, 1 gasteropod, and 2 fishes, presumably bottom-fish: *Macrurus armatus* (Hector), 1 individual 70 cm. in length, and *M. breviparbis* (G. and B.), 1 individual 25 cm. in length.

Same Station. Duration of haul, 3½ hours. Cod-end full of ooze, and in the meshes 3 ophiurids (*Ophiopleura*, *Ophioglypha*, *Ophiosten*?); washing the ooze produced 4 actinians (one of them growing on a hermit crab), 1 holothurian (*Elpidia*), worms in clay tubes, and some gasteropods.

Station 48. Between the Canaries and the Azores, over 5000 metres. Duration of haul, 4½ hours. Trawl contained a large quantity of ooze, the washing of which produced: 30 pieces of pumice-stone, 1 shell of *Argonauta*, 1 ear-bone of a whale, 2 sharks' teeth (*Carcharodon* and *Oxyrhina*), 10 large shells of pteropods (*Cavolinia*), 1 umbellularian (*Umbellula güntheri*), 1 sertularian, 2 holothurians (*Lætmogone violacea*, *Elpidia* sp.). Besides these there were 3 pelagic fishes (*Malacosteus indicus*, *Argyropelecus* sp., and a *Leptocephalus*), and 3 fishes which may be surmised to have lived at the bottom (*Alepocephalus*, a new genus related to *Ipnope*: *Bathymicrops regis*, see Fig. 305, and a specimen not yet determined).

These hauls of the "Michael Sars" thus entirely confirm the idea of the poverty of the abyssal plain, a confirmation especially valuable on account of the size of the trawl employed and the technical success attending its use in great depths. The proof afforded by these results of the "Michael Sars," like that from all other expeditions, suffers from the inherent weakness attached to all negative proofs. The barrenness of the abyssal plain may be only apparent, owing to imperfections in