

being extremely numerous in certain localities and absent in others; no doubt the currents at the bottom are responsible for this, seeing that the depth and temperature are in themselves entirely favourable. These enormous quantities of small crustaceans must have an appreciable influence upon the shoals of fishes, and in particular upon the young fishes, and this I have been able to confirm by direct observation. On the northern slope of the Dogger Bank we captured a number of young whittings and flounders with the trawl at a depth of 38 metres (temperature  $10^{\circ}$  C.), and their stomachs at first sight seemed to contain only sand, but closer investigation revealed small amphipods (sand-hoppers) which thus formed their principal nourishment, the sand being swallowed simultaneously with them; the stomachs of the larger fishes generally contained hermit crabs and swimming crabs (*Portunus*). The caprellids seemed to be especially associated with a bottom overgrown with hydroids, and were found only exceptionally where hydroids were absent.<sup>1</sup>

The central portion of the North Sea is poorly supplied with pycnogonids (sea-spiders), there being only one widely distributed form (*Pycnogonum littorale*), and it was only found in deep water (80 to 100 metres) at low temperatures ( $6^{\circ}$ - $7^{\circ}$  C.), where I sometimes found it, as described by Sars, clinging to large sea-anemones (*Urticina crassicornis* and *Metridium dianthus*), into the skin of which it bores its proboscis for sucking; a solitary specimen of *Nymphon strömi* was the only other pycnogonid found in deep water.

The ascidians (sea-squirts) are also poorly represented; the monascidians (simple sea-squirts) were not very conspicuous anywhere in the area examined, but we got large and well-developed specimens of *Ciona intestinalis* in about 80 metres (tempera-



FIG. 350.  
*Macroclinum pomum*, M. Sars.

<sup>1</sup> The commonest is *Caprella linearis* (it seems difficult to discover any invariable difference between this species and *C. septentrionalis*), but stray specimens occur of *Proto pedata*, mainly found along the edge of the Norwegian depression, at a depth of about 100 metres, and one individual of *Protella phasma* was captured at 77 metres, temperature  $7.33^{\circ}$  C.