

commonest forms. *Ophiura ciliaris*, too, is far more plentiful in the Skagerrack, and the gasteropod, *Nassa reticulata*, occurs in quantities in the littoral zone of the Skagerrack, but is comparatively rare on the North Sea coast.

I have noticed also a difference between the fauna which patronises *Laminaria hyperborea* and the fauna associated with the two other species of *Laminaria*. It is only the first named with its stiff thick stalks which is densely crowded with attached forms, whereas the comparatively thin pliant stalks of the other two are either entirely neglected or only made use of to an inconsiderable extent, with the result that there are nearly always far more individuals in the *L. hyperborea* belt than in either of the other two laminaria communities.

I have already stated that the natural conditions prevailing on the different coasts affect the character of the fauna much more in the littoral zone than at greater depths. Where, for instance, there is nothing in the way of foundation for attached forms, we must expect to find a fauna more suited to another kind of environment. Thus on many North Sea coasts, where the long shallow shores consist merely of sand, like the "vader" of Schleswig and Holland, upon which the waves do not break with any violence, there are immense stretches where practically the sole inhabitants are the lug-worm (*Arenicola*), a tunnelling amphipod (*Corophium grossipes*), and one or two other forms. In such sandy stretches the fauna differs entirely from that found along rocky coasts, and only occasionally do we get attached forms where piles, stone quays, or other suitable foundations happen to occur. The animal life differs again on the sandy Danish coasts, which are unprotected by a line of outer islands, and are therefore exposed to the full force of the breakers, where the constant disturbance produced by the waves upon the sandy bottom is distinctly unfavourable to plant and animal life; consequently the upper littoral zone on such coasts rarely harbours many forms. On the other hand, at slightly greater depths, and in fjords or similar enclosed areas, we get the conditions requisite for the development of *Zostera* vegetation with its special fauna. We may see how much the topography of the bottom affects the development of animal life by studying the conditions on the Kattegat coast of Denmark; wherever reefs, overgrown by algæ, occur amidst the eelgrass, we may be certain of finding a fauna consisting of chitons, snails, bryozoans, and hydroid polyps.

The littoral fauna in the southern portion of the North Sea