

the tidal area is their proper home. On the other hand, those forms which have been described as passing their lives in the vicinity of low-water mark are not limited to this situation, but may be met with throughout the whole littoral zone, sometimes on sand, sometimes on rock, and sometimes impartially on either hard or soft bottom. Furthermore, on the coasts of Norway the majority of the forms which characterise the littoral zone either never, or only to an inconsiderable extent, pass below its lower limit, though there are some that go down to perhaps about 100 metres, and a very few that descend to greater depths. But forms which on the Norwegian west coast are exclusively littoral, may be met with in deeper water in other northern areas, as I shall show later on.

The sub-littoral zone.

It would hardly be possible in a short account like this to give even an approximately complete description of the fauna along the coasts in the sublittoral zone, seeing that this is the abode of most coastal species living below the littoral zone. As a rule, the soft bottom is of a different character from that in the deepest parts of the fjords. Instead of viscous gray clay or mud, a coarser clay, more sandy in character, covers the floor in the medium depths of the sublittoral zone, which in the case of the fjords is near the sides or on submarine banks. Where there are plateaus sloping gradually down from the sides we also get rocks and stones and bits of shells, and there is thus accommodation for forms that naturally live on hard bottom. We often get, for instance, quantities of brachiopods and bryozoans, as well as a certain number of hydroids, ascidians, etc. Generally speaking, the character of the bottom here is more favourable to animal life than in the deep water, for while the mud harbours chiefly burrowing mussels, for instance, the medium depths accommodate, in addition, a large number of creeping snails.

A good many forms which occur in the continental deep-sea zone ascend to the sublittoral, and some even as high as the littoral¹ zone. Still for most of them we may put the upper limit of distribution at 100 to 200 metres. Probably, however, their vertical distribution is affected to some extent by the variations in the vertical distribution of the Atlantic water, which may be higher or lower according to the different seasons

¹ For instance, *Pagurus pubescens*, *Ophiopholis aculeata*, and *Terebellides strömi*.