

most from those of the Norwegian Sea. It seems, then, that the arctic-boreal species have not been able to adapt themselves to such conditions, or in other words that their power of adaptation is limited.

Outside the Norwegian Sea the species of this group have another area of distribution on the western side of the Atlantic, north of Cape Cod. The cold polar current sweeps down over the shallow parts of the American coast, and produces conditions that vary from arctic to boreo-arctic. As a result we find there arctic species, such as normally occur in the boreo-arctic areas of the Norwegian Sea and similar waters, and also the majority of the arctic-boreal species of the Norwegian Sea, a few of the latter being found as well a little to the south of Cape Cod, where conditions are more boreal.

(2) The second group consists of the boreal species, that is to say, those species which are limited to boreal areas within the Norwegian Sea, and those which are able to penetrate as well into boreo-arctic areas, though not into arctic tracts. Most of them are widely distributed over the northern Atlantic, either in its littoral and sub-littoral or in its deeper zones. We find their southern limit accordingly in the Mediterranean or at the Azores and the Canary Islands, while the deep-sea forms also go a long way south on the American side. Very few of the shallow-water forms, however, which extend southwards along the coasts of Europe are to be met with on the American side of the Atlantic, either because they cannot pass across the profound depths separating the two continents, or because they are debarred from advancing over the shallow northern parts of the Atlantic by the arctic conditions prevailing there. No satisfactory explanation can, therefore, be given for the presence of the very few boreal shallow-water forms which are common to both sides.

I have already stated that most of the species of this group have migrated into the Norwegian Sea in post-glacial times, and their present distribution is evidence of this; but there are some species nowadays confined on the eastern side to the boreal and boreo-arctic areas of the Norwegian Sea, and on the western side occurring to the north, and in some cases also a little to the south, of Cape Cod. As to their origin it is difficult to form an opinion, but most probably a number of them have been developed from arctic species after the ice-period came to an end, and have adapted themselves to their boreal