libellula and *Parathemisto oblivia*, the prawns *Hymenodora glacialis* and *Pasiphæa princeps* are partly arctic, partly boreo-arctic, and partly boreal in their occurrence, but in the present state of our knowledge it is impossible to define sharply the general laws of their distribution. In the year 1900 I made a number of closing-net hauls in the Norwegian Sea, which showed that there was a peculiar pelagic fauna in the deep cold layer below the Gulf Stream, including the following large forms: *Cyclocaris guilelmi*, *Hymenodora glacialis*, *Pasiphæa princeps*, and large Sagittæ (*S. gigantea*).

Of holopelagic fish there is not a single arctic species. The coast fishes of Greenland, Spitsbergen, and other Arctic shores may certainly be captured in the surface waters above the coast-banks, but their life-cycle is not wholly pelagic. In regard to one species only, *Gadus saida* (the polar cod), there may be some doubt, for it lives everywhere along the ice independent of depth, but it seems most feasible to classify it among the Arctic shore-fishes. In the case of this fish the ice apparently replaces the shore, a condition peculiar to many other arctic forms.

Highly important is the Capelan or Caplin (*Mallotus villosus*), which lives in the Arctic or in the extreme north of the boreal area, where it appears at all events once a year to deposit its spawn on the coast banks. We may thus term it a meropelagic fish of "boreo-arctic" character.

The black *Paraliparis bathybii* has been taken by the "Michael Sars" in mid-water in the Norwegian Sea, but whether this species is mainly a bathypelagic or a bottom fish cannot be decided from the available records.

Atlantic animal communities.

It has long been known that Atlantic species sometimes appear in the coast waters of Norway, and Nordgaard[1] has published an interesting review of historical details of this kind. Thus in 1821 salpæ were observed by a certain Norwegian priest, and between the 'twenties and 'forties of last century when Michael Sars was engaged in his pioneer work on the west coast of Norway, he found many Atlantic forms, like *Salpa mucronata* and *S. fusiformis*, well known by the fishermen and termed "Silderaek," a portent of successful herring fishery. Sars described from the west coast of Norway some new species of Siphonophores and a larval Actinian having their main distribution in the Atlantic, such as *Galeolaria*

[1] *Kgl. Videnskapers selskaps skrifter*, Trondhjem, 1910.