

Food of
Appendicularia.

97 most of the forms were diatoms, and to a great extent consisted of *Rhizosolenia alata*. Generally speaking we discovered that salpæ do not trouble to make any selection. Lohmann's studies of *Appendicularia* have shown us that these animals get their nutriment by means of a filter apparatus, which allows only the minutest organisms, coccolithophoridæ in particular, and small peridineæ, to enter the digestive canal.

Food of
Copepods.

The chief consumers of plants in the sea are undoubtedly copepods. Their conditions of nutriment, however, have so far been principally studied by means of their excrements, which sink down in the shape of small elongated lumps, and are often brought up in numbers by the silk nets. Still, in these excrementa all the softer components have been digested, and the shells that can be identified do not necessarily always belong to species which are an indispensable part of their nutriment. Undoubtedly the calcareous shields of coccolithophoridæ occur too frequently for their presence to be ascribed to chance, indicating, moreover, that the digestive juices of copepods cannot have an acid reaction. In addition we very often meet with more or less bent and distorted coverings of peridineæ, and in northern waters the excrements contain stiffer forms like the little *Dinophysis granulata* in a practically unchanged condition. In localities where diatoms predominate, the excrements consist largely of bent and broken bits of species like *Rhizosolenia semispina* and *R. alata*. Even if Hensen's view be right that diatoms supply far less nutriment comparatively than the other classes of plants in the plankton, it is at any rate quite certain that the animals do feed on them, and especially when they are plentiful. In the Norwegian Sea I have several times observed that where diatoms abounded there might perhaps be only a few copepods and other plankton animals; still the copepods were there, and in large numbers too, just below the diatom zone, and their excrements consisted to a great extent of the silicious coverings of diatoms.

Proportion of
plants and
animals in
the plankton.

Hensen noticed that the plants in the sea are often so scanty that it is hard to understand how all the animals get enough nourishment, and this is even more difficult to comprehend when we consider that the plants have directly or indirectly to support every single animal from the surface right down to the bottom. In many cases, perhaps, the plants may be more abundant than a cursory examination would seem to indicate; and the most diminutive forms, which are still practically unknown to us, undoubtedly exist in sufficiently