

The islands (Shetlands, Orkneys, Lewis, North Uist, Benbecula, Mull, and Lismore) with which I am dealing in this present paper all have the northern type of plankton, but they do not agree together so completely as might have been expected; and the differences are sufficiently marked to enable one to readily distinguish between a tow-netting from the Shetlands, the Orkneys, or Lewis. In reality the Lewis plankton is very like, though not quite identical with, that of Ross-shire, whilst the Shetlands and Orkneys have each a more distinctive plankton. Nevertheless, if a complete list of all the species found in the Shetland lochs be compared with lists from the Orkneys or from Lewis, the differences will appear rather small, being for the most part varietal rather than specific. In this paper I am dealing with only three species of the plankton assembly, viz. *Daphnia longispina*, *Bosmina obtusirostris*, and *Ceratum hirundinella*, and it will be seen that the *Daphnia*, and to a less extent the *Bosmina*, are present as fairly definite varieties in the several regions considered. I think it very probable that investigation would bring out very similar facts for a number of other species of the plankton, e.g. *Bythotrephes longimanus*, *Leptodora hyalina*, various Rotifers and Desmids.

It should be mentioned that the material available for the following comparisons was simply the tow-nettings taken on the various lochs at the time when the Lake Survey happened to be stationed there; consequently each loch is represented by only one gathering; but as the various islands were visited by different members of the Survey staff at about the same time of the year, and that the best season for plankton-collecting, a comparison is justifiable. An examination of plankton from a number of lochs on each of these islands has provided the following distinctive characters:—

For the Shetlands, examined 30th June to 11th August 1903, a very definite variety of *Daphnia*, a small form of *Bosmina obtusirostris*, a marked abundance of *Diaptomus wierzejskii*, and apparently total absence of *Diaptomus laciniatus*, a general rarity of *Holopedium gibberum*, *Bythotrephes longimanus*, *Leptodora hyalina*, *Polyphemus pediculus*, and *Diaphanosoma brachyura*, and a great abundance of *Ceratum hirundinella*.

For the Orkneys, examined 15th to 27th August 1903, another variety of *Daphnia*; otherwise much like the Shetlands.

For Lewis, examined 10th July to 21st August 1903, *Daphnia* of a smaller type, a larger form of *Bosmina*, a marked abundance of *Diaptomus laciniatus* and apparently absence of *Diaptomus gracilis*, an abundance of *Holopedium gibberum*, *Leptodora hyalina*, *Diaphanosoma brachyura*, *Bythotrephes longimanus*, and *Polyphemus pediculus*, rarity