

R. Southern and A. C. Gardiner. Reports from the Limnological Laboratory II. The Diurnal Migrations of the Crustacea of the Plankton in Lough Derg. Proc. Roy. Irish Acad. Vol. XL, Section B, No. 11, pp. 121—159. Dublin, 1932.

In continuation of their studies on the plankton of Lough Derg, Ireland, the authors have published the results of a continuous series of observations made over a period of six consecutive days on the diurnal migration of the crustacea in water 26.5 m. deep at 6 periods in each 24 hours. Collections were made in an extremely careful manner by serial vertical hauls with a silk closing net at 5 metre intervals, except near the surface where the intervals were reduced to 2 and 3 m. Results are given for the following species:— *Daphnia longispina*, *Bythotrephes longimanus*, *Leptodora kindtii*, *Diaptomus gracilis*, *Eurytemora veioxi*, and *Cyclops strenuus*; *Mysis relicta* also occurred in sufficient numbers to be considered. Different types of movement were shown by the different species, and also by the different sexes and ages in a single species. The results shown by each species on consecutive days are not absolutely uniform, there is, however, on the whole sufficient consistency to convey the impression that a true picture has been produced for the behaviour of each species for the time of year and conditions existing when the collections were made, namely August 2nd to 8th, 1922. The authors take into consideration all possible errors, but the consistency of the results would seem to disprove any likelihood of large errors having crept in. Many of the inconsistencies from day to day can be explained by unevenness in horizontal distribution.

In view of the great care taken over these collections this paper must be regarded as a valuable contribution to the study of the vertical distribution of plankton animals in fresh water. The authors made at the same time observations on the temperature, pH and transparency of the water, and on the weather conditions. The weather was fairly consistently overcast and the water turbid (Secchi disc disappeared at 3.8—4.8 m.). The data have therefore additional interest in that they were obtained under markedly different conditions from those of Worthington¹⁾ on some of the same species in Lake Lucerne in September, when the weather was cloudless and the transparency 8 m.

It is by slowly amassing reliable data of this kind that eventually we shall be able to piece together a true picture of the lives of these plankton animals and explain the differences in their behaviour from time to time and place to place. But, as the authors point out, the collections must be very complete and cover all seasons of the year, and the material thus gained must be subjected to minute analysis as to age, maturity, and sex of any one species.

Interesting notes are also given in this paper indicating that trout and pollan may migrate to the surface at night while perch do not.

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F. S. Russell. On the Biology of Sagitta. Pts. I and II. Jour. Mar. Biol. Assoc. N. S., Vol. XVIII, No. 1, Plymouth, 1932.

Since it has been discovered that British waters are liable to the visits of two species of Sagitta in relatively large numbers further investigations

¹⁾ Worthington, E. B. (1931). Vertical Movements of fresh-water Macroplankton. Internat. Rev. d. g. Hydr. u. Hydr., Bd. 25, Heft 5/6, p. 394.