

on zooplankton. The larger fish found from August onwards were caught in the littoral zone where almost all of them had been feeding on insects (mainly adult Chironomidae). Mysids, although abundant in the lake, were found only once in the gut contents.

During the 4 months of observations the fish grew from an average length of 49mm to a maximum of 74mm, the maximum growth rate being 0.91mm per week. A considerable size variation in adult females was found. Spawning occurred in the lake despite the absence of clean sand or pebbles.

(This work was done as a IIIB project in 1968)

Some studies on Oniscigaster wakefieldi (Ephemeroptera)

J.A. McLean (Gisborne)

Detailed studies of external morphology have shown the synonymy of O. intermedius Phillips 1930, and O. wakefieldi McLachlan 1873. There are clear morphological distinctions between O. wakefieldi and O. distans.

Because O. wakefieldi had been found previously only as isolated specimens and because of its highly local distribution, a more efficient collecting net was devised. In design, the net had a cork line and lead line. Instead of suspending the terylene netting directly between the two lines, it was sewn into the shape of a pyramid on a rectangular base. On the truncated vertex, a collecting bag was attached. All larvae caught were measured (in mms) and returned to the population in the pool. The percentage frequency of each mm size group in any one month was plotted as a kite diagram. In this manner, by monthly sampling, a detailed picture

of the life cycle of O. wakefieldi in the Waitakere Stream was built up.

Greatest number of young larvae (3 - 10 mm) were found in February and March and populations showed a constant rate of growth through to October (2.5 mm per month). The first emergences were recorded in mid-October and continued till late January. By measuring a sample of 56 final exuvia collected from boulders in the stream bed during the emergence period, it was shown that the emergent females averaged 24-25 mm in length while the emerging males averaged 20-21 mm. This 4 mm 'average difference' in the size of male and female larvae showed up in populations as early as June. O. wakefieldi has a univoltine life cycle.

(This work formed part of an M.Sc. thesis at Auckland in 1967).

Flight Activity of Mayflies

P.H. Norrie (Zoology Department, Auckland University)

The M.Sc. thesis research on which this report is based was carried out in the Cascades area of the Waitakere Ranges. The main sampling apparatus was a Robinson light trap, modified so that the catch fell directly into a bottle of alcohol thus eliminating handling of the insects in the field. The trap was operated from the stream bed.

Light trapping as a sampling technique has the disadvantage that the catch size and its composition is to a very great extent dependant on the behavioural response of each species to the trap. Sex and physiological state may also be important. It must therefore be kept in mind when interpreting results that the light trap catch is probably a biased sample of the flying population.