

## Some Temporary Ponds near Sutton, Otago

B. J. Marples

Department of Zoology, University of Otago.

A preliminary survey has been made of some temporary ponds near Sutton, about 30 miles inland from Dunedin. In an area of roughly one square mile, 800 ft. above sea level, 150 ponds have been visited. The area consists of a horizontal surface of schist, with many outcrops and a very thin covering of soil. The ponds are of all sizes, the largest being a salt lake of several acres, and all are very shallow and at times dry completely. A great deal of variety is seen in the vegetation of the ponds according apparently to the depth of the soil, and an attempt is being made to group them into types with a view to comparing their faunae. Some are floored with bare mud and rock, while others, the most permanent, are covered with *Potamogeton* sp. Of the intermediate types some are densely covered with a growth of *Juncus* spp., some have a continuous low-growing sheet of *Pratia*, *Selliera*, etc., and others are very distinctly zoned from the margin to the centre: tall *Juncus* spp., the mat of *Pratia* and *Selliera*, a region of *Eleocharis* sp., and perhaps another *Juncus* sp. or *Glyceria* in the wettest central area. The faunae have not yet been intensively studied, but the presence of one of the Conchostraca is interesting as this appears to be the first record of a member of this order in New Zealand.

A similar but isolated pond, situated some 400 ft. higher up a mile or two away was selected because it more often contained water, and has been visited at intervals since October, 1958. It has contained water during four periods of varying length, being completely dry between. Most of the bot-

tom is bare and rocky, and the water over it usually only two or three inches deep, but one end is deeper with a mud bottom covered with vegetation. Twelve visits were made during wet periods, and samples of the water-bugs and of the crustacean plankton were taken.

The bugs were the Corixid *Sigara arguta* and the Waterboatman *Anisops assimilis*, which fly readily to and from the pond. These were most common as adults in November and December. Large numbers of *Sigara* nymphs appeared during wet periods in both these months, while those of *Anisops* appeared and reached a peak at the end of December. Large numbers of nymphs were killed when the pond dried up.

The crustacea *Boeckella triarticulata*, *Cyclops* sp., *Daphnia carinata* and *Simocephalus acutirostris* form an interesting comparison as they survive as resting eggs, and the ephippia of the Cladocera are very common in the mud. *Daphnia*, very abundant in October, soon died out, but appeared again in small numbers in the autumn. *Simocephalus* was abundant in the summer. *Cyclops* and *Boeckella* occurred at all times, *Boeckella* being extremely numerous in June and July. In the short wet periods of the summer, *Cyclops* appeared immediately, *Boeckella* somewhat later. This is presumably because *Cyclops* survives in the mud in a copepodid stage rather than as an egg. Careful search has not yet been made to determine the complete fauna, but the following have been noticed: 7 crustacea, 14 insects, 1 mite, 2 molluscs and 1 annelid.