ECOLOGY OF *AUSTROCHILTONIA SUBTENUIS* (SAYCE) 
(*AMPHIPODA, HYALELLIDAE*)

BY

K. H. LIM and W. D. WILLIAMS

Department of Zoology, Monash University, Clayton, Victoria 3168, Australia

INTRODUCTION

Knowledge concerning the amphipods of Australian inland waters is mostly taxonomic in content; ecological information is limited. Yet in south-eastern Australia (including Tasmania), amphipods are amongst the commonest inhabitants of fresh and slightly saline inland waters. This paper summarises some ecological observations on one of the most abundant species in lowland standing waters in western Victoria, *Austrochiltonia subtenuis* (Sayce). It is presented as a further contribution to studies on the fauna of south-east Australian saline lakes (see also Bayly & Williams, 1966; Lee, 1969; Walker, 1969; Bayly & Ellis, 1969; Ellis & Williams, 1970; Williams, 1970).

The species has recently been redescribed by Williams (1962), who upheld its specific separation from *A. australis* (Sayce), its only congener and also an abundant and widespread species in southern Australia. Further evidence of specific separation is provided by the results of some crossing experiments. In these, attempts were made to cross eight *A. subtenuis* males with eight *A. australis* females, and vice versa. Eight *A. subtenuis* and four *A. australis* intraspecific crossing experiments were undertaken as controls. Live young were produced in the latter experiments, but no interspecific crossing was successful.

Geographically, the species is widespread in southern Australia (including Tasmania) (Williams, 1962). In Victoria, numerous collections (28) have been obtained from the western half of the State, but the species is rare in the eastern portion. At least partially, this is undoubtedly because of the paucity of suitable habitats.

BREEDING

The breeding period was studied by examining sixteen monthly samples collected from Lake Modewarre, western Victoria, from July 1961 to November 1962. The lake is moderately saline (salinity ca. 3.70‰), is 415 ha in area, and has a maximum depth of only 4 m. Considerable quantities of macrophytes occur marginally, mainly *Lepilaena cylindrica* Benth. and *Ruppia maritima* L., within

1) Present address: Department of Zoology, University of Tasmania, Hobart, Tasmania, 7000.
which the amphipod occurs very abundantly at all seasons. Samples contained from 323 to 1,574 specimens (av. 791), but approximately uniform time was spent per month in collecting them. Sample analysis included length measurements, sexing, and the division of females into those without a brood-pouch, those ovigerous, and those with empty brood pouches. The sex of a specimen could be determined only if its length was 2.5 mm or greater.

Judged by the presence of ovigerous females or females with empty brood-pouches, breeding occurs throughout the year. It is, however, clearly of unequal intensity as may be seen from fig. 1 which shows the numbers of breeding females each month expressed as a percentage of all females ≥3.0 mm length (the minimum recorded size of a breeding female). Two maxima apparently occur, one, the larger, in summer and early autumn (December to April), and another,