

The small spionid, *Polydora* sp. was almost invariably found living in a U-shaped tube formed in the prismatic layer of live *Chione stutchburyi* shells over 1.6cm high, but occasionally occurred in *Amphidesma australe* shells. Its distribution thus coincided with that of the suitable sized *C. stutchburyi* on the lower-beach. Of the remaining species no other information than that recorded in Figure 8 and Table I was collected.

(d) *Crustacea* (Fig. 5)

The talitrid amphipod *Talorchestia quoyana* was recorded only from station 1. Widely differing counts obtained for this species in the two samples taken can be attributed to the great activity of individuals when disturbed, with consequent escape of many during sieving, and to their habit of congregating under drift material unevenly scattered over the beach.

Several species of amphipods inhabited the beach below M.L.W.N. The two commonest were identified to their families—Phoxocephalidae and Haustoriidae, while the few remaining individuals were classed as "other amphipods", and are not shown in Figure 5. Four species of ostracods were also taken in this area of the beach, one of which, a "giant" ostracod, was identified as *Cyclasterope*, probably *C. zeylandica*. Except for one cirolanid individual, *Isocladus armatus* was the only isopod recorded from the beach and it was common only at stations 2 and 3.

The common sand shrimp, *Pontophilus australis*, was distributed relatively evenly over most of the beach below station 3, while the two commonest crabs, *Halicarcinus cooki* and *Hemiplax hirtipes*, were more or less restricted to stations 4, 5 and 6. A single specimen of *Hemigrapsus edwardsi* was also taken in this area and *Hemigrapsus crenulatus*, though not found on the sandy areas of the main beach, inhabited burrows beneath the clumps of *Modiolus neozelanicus* attached to the exposed rock basement bordering the middle of the beach.

*Callianassa filholi* was recorded only once in samples from the transect. Since it lives in burrows deeper than 20–25cm (the full depth of sampling) deeper diggings were carried out some distance from the transect line. These revealed that *C. filholi* was moderately common on the beach from about M.L.W.N. down, but no quantitative assessments were made of its numbers. For the same reason *Lysiosquilla spinosa* was not recorded from the transect stations, but it did occur on the beach below about M.L.W.N.

Another species not shown in Figure 5, *Elminius modestus*, was taken in small numbers attached to the shells of living *Amphidesma australe* and *Chione stutchburyi*.

(e) *Other fauna* (Fig. 4)

The large yellow acorn worm, *Balanoglossus australiensis*, was present on the beach from just below M.S.L. (station 4) down. Its density increased down this area to below M.L.W.S. (station 10), where up to 100 adults and 450 juveniles (< 5cm long) per m<sup>2</sup> were recorded.

Three species of Echinodermata were taken on the beach. *Amphiura aster*, a burrowing ophiuroid, and *Trochodota dendyi*, a burrowing synaptid holothurian, were both taken in transect samples but the cake urchin, *Arachnoides zelandiae*, was found only once when digging was carried out off the transect line at about M.L.W.S.

Nemertines were present on the beach but no specific identifications were made. Their tendency to fragment, and their habit of actively crawling through the sieve mesh, made accurate estimation of their numbers practically impossible.