

When the two species of *Nectocarcinus* were collected at the Auckland Islands in January, 1963, it was noted that at no time were they taken together in the same trawl haul. *N. bennetti* was taken between 10 and 15 fathoms at three localities in or just outside Port Ross, from bottoms of sand, dead shell and red algae, while *N. antarcticus* was taken between 14 and 15 fathoms at one locality in the same area from a bottom of abundant, finger-like sponges and some *Macrocystis* kelp. The following decapods were taken in association with these portunids: the cancrid crab *Cancer novaezelandiae* (Jacquinot), the hermit crab *Pagurus* sp. and the crangonid shrimp *Pontophilus pilosoides* Stephensen with *N. stephensoni*; the majid crab *Leptomithrax australis* (Jacquinot), the hymenosomatid crab *Halicarcinus planatus* (Fabricius) and the squat lobster *Galathea pusilla* Henderson with *N. antarcticus*. The hippolytid shrimp *Nauticaris marionis* Bate occurred with both species.

A surprising feature amongst material of *N. antarcticus* from Cook Strait northwards is the occasional occurrence of extremely small ovigerous females. Specimens examined can be listed with their respective carapace widths as follows: Colville Channel (26fms), 12.0mm, 14.4mm; Off East Cape (70fms), 29.4mm; between Foxton and Wanganui (50fms), 10.5mm (smallest ovig. ♀, see Griffin and Yaldwyn, 1965), and Tasman Bay (45–55fms), 13.6mm. At one stage it was suspected that these small ovigerous females might represent a different species. We can, however, find no consistent differences between them and typical *N. antarcticus*. All the specimens concerned are from depths greater than 25 fathoms but too little material is available to draw any conclusions regarding bathymetric or geographic variation at present. Northern examples certainly do not attain the size of Auckland Island specimens in either sex. At the Auckland Islands ovigerous females with carapace widths up to 65.7mm occur.

Distribution

New Zealand mainland from Cape Maria van Diemen to Stewart Island, Chatham Islands, Bounty Islands, Auckland Islands and possibly Campbell Island, 6–300fms. (Mr E. W. Dawson informs us that there is undoubted material of *N. antarcticus* from Campbell Id. in the N.Z. Oceanographic Institute collections.)

THE AUSTRALIAN SPECIES *N. integrifrons* AND *N. tuberculosus*

Large specimens of the two well-known Australian species of *Nectocarcinus* are easily distinguished from each other, the carapace differing markedly in convexity, tuberculation and hairiness; this has been clear from the time of Milne Edwards (1861: pls. 37 and 38) who provided excellent illustrations of the two species. However, small juveniles and even moderately sized adults have historically provided difficulties. The fact that the two species have been usually separated by the presence or absence of a central notch in the frontal margin, a feature which is variable—a notch is sometimes present in both species—and the shape of the first pleopods in the males, which is very similar in the two species (Stephenson and Campbell, 1960: 82–83, pl. 6, figs. A and B), made positive identification of small specimens extremely difficult and often virtually prevented a clear separation of a sample into two species, or alternatively, suggested the existence of two species in a sample when only one was present.

Examination of the large series of specimens of *Nectocarcinus* taken in Port Phillip Bay (Griffin and Yaldwyn, in press) eventually showed that but a single species, *N. integrifrons* (Latreille), was present, although the presence of a central notch in the frontal margin and the pattern of tuberculation of the carapace in some specimens at times suggested that *N. tuberculosus* A. Milne Edwards occurred sympatrically with *N. integrifrons*. Further examination of a number of features in the large series of specimens of both species reported on previously by Rathbun (1923) and by Stephenson and Campbell (1960) allowed a discrimination between