

*Tripneustes gratilla* is known from east Australia and the Indo-Pacific from East Africa to Hawaii and Southern Japan. Its occurrence in New Zealand is a new record, although the species has been reported from the Kermadec Islands (Mortensen, 1943). In New Zealand, it is known only from the Bay of Islands and the Poor Knights Islands at present, but there are reports of specimens having been collected at Whangaroa (35° S), and I have seen photographs of what appears to be this species taken at Mayor Island, Bay of Plenty.

Super-order ATELOSTOMATA Zittel, 1879

Order SPATANGOIDA Claus, 1876

*Brissus gigas* Fell

Fell, 1947, p. 145, figs. 1-2, Pls. 13-14. Mortensen, 1950, p. 518. Baker, 1965, p. 69, fig. 1, Pls. 1-2.

MATERIAL EXAMINED: 1965, Poor Knights Islands, 174° 44' E, 35° 28' S, 20-50m, six empty tests collected by Messrs K. Tarlton and W. Palmer. 12/1/67, South-west Island, Three Kings Group, 172° 3.5' E, 34° 10.5' S, 39m, one specimen, collected alive by Mr K. Tarlton.

REMARKS: The Three Kings specimen was located on a patch of broken shell and bryozoan debris in an area swept by strong currents, and is the first example of this species to be collected alive. It has the following dimensions: length, 83mm, breadth, 66mm, height, 47mm. Little can be added to descriptions of this endemic heart-urchin given by Fell (1947) and Baker (1965), except that the shape of the ambis is much too variable to be used as a distinguishing feature of the species as I suggested in 1965.

Two small bivalve molluscs, identified as *Coriarius* sp. (Mr W. F. Ponder, pers. comm.), were attached to the radioles on interamb five of the Three Kings specimen.

The known range of *B. gigas* is now Three Kings Islands south to Poor Knights Islands, although Fell (1947) reported fragments of a spatangoid, which may have been this species, from Great Barrier Island.

#### DISCUSSION

The discovery of *Tripneustes gratilla* and *Phormosoma bursarium* in northern New Zealand waters brings the number of echinoids known from that region to 29 (25 genera)—approximately 70 percent of the total echinoid fauna of New Zealand. Fourteen species are apparently restricted to the continental shelf, seven are archibenthal, and eight are eurybathic (Table I). On the East coast, 20 species are known only from north of East Cape. Of the remaining nine species, five (*Ogmocidaris benhami*, *Araeosoma thetidis*, *Phormosoma bursarium*, *Fellaster zelandiae*, and *Brissopsis oldhami*) range to the Cook Strait—Chatham Rise area, two (*Peronella hinemoae* and *Echinocardium cordatum*) have been recorded from near Foveaux Strait, and two extend south to the Snares and Auckland Islands (*Evechinus chloroticus* and *Apatopygus recens* respectively). Little is known of the west coast distribution of echinoids.

Thirteen of the 29 species known from northern waters are endemic to New Zealand, and nine of these are peculiar to the area north of East Cape (Table I). Among the endemics, such species as *Goniocidaris magi*, *G. corona*, *Diadema palmeri*, and *Brissus gigas* have very close relatives in the Australian-Indo-Pacific region. Twenty northern New Zealand genera are represented in Australian and Indo-Pacific waters, including ten species which are common to Australia and New Zealand, and eight species of wider Indo-Pacific distribution. These warm-water echinoids provide strong evidence for the suggestions that much of the echinoid fauna of New Zealand was derived from the Indo-West Pacific region, and that sub-