

from 169m to the surface. Grice and Hulsemann (1967) found *C. poppei* in the west Indian Ocean between 1,000–2,000m. Farran (1929) is the only author to find this species at the surface off Three Kings Islands.

Chirundina streetsii Giesbrecht, 1895

Vervoort (1963) tabulated the bathymetric distribution of *C. streetsii*. Grice and Hulsemann (1965, 1967) recorded *C. streetsii* in the northeast Atlantic at 450–1,000m and west Indian Ocean at 2,000–1,000, 0–3,820, 225–2,600, 350–2,500, 350–3,500, 350–1,479, 350–1,710, 0–3,140m. Farran (1929) is the only person to record it at the surface off Three Kings Islands.

Gaetanus minor Farran, 1905

Farran (1926) stated that during the day the optimum depth range lies between 150–250 fathoms, but at night a few specimens ascend to the lower 50 fathoms of the epiplankton. Grice and Hulsemann (1965, 1967) recorded *G. minor* from the northeast Atlantic at 450–100m and west Indian Ocean at 2,000–1,000m.

Undeuchaeta plumosa (Lubbock, 1865)

Vervoort (1957) considered this species to be restricted to moderately deep waters and tabulated depths. It may come to the surface at night. Grice and Hulsemann (1965, 1967) recorded *U. plumosa* in the northeast Atlantic at 450–900m and in the west Indian Ocean at 2,000–1,000, 350–1,710, 1,980–1,010. Farran (1929) recorded this species as *U. minor* at the surface during the day north of New Zealand.

Euchaeta acuta Giesbrecht, 1892

Farran (1926) recorded *E. acuta* in the Bay of Biscay down to 1,000 fathoms although during the day its main distribution is between 100–200 fathoms. At night there is a distinct migration to the uppermost 75 fathoms. Farran (1929) found this species at the surface off New Zealand in quite large numbers during the day.

Scottocalanus securifrons (T. Scott, 1894)

Vervoort (1965) tabulated the bathymetric distribution which is in deep and intermediate water layers. Only Farran (1929) recorded *S. securifrons* from the surface off Three Kings Islands.

Lophothrix latipes (T. Scott, 1894)

Vervoort (1965) tabulated the vertical distribution of *L. latipes* which comes from deep and moderately deep waters. Farran (1929) is the only person to record it at the surface off Three Kings Islands.

Pleuromamma xiphias (Giesbrecht, 1889)

Vervoort (1965) considered this species to be very characteristic of intermediate and deep water masses of tropical, subtropical and temperate regions. Grice and Hulsemann (1965, 1967) record *P. xiphias* in the northeast Atlantic at 500–2,000m and the west Indian Ocean at 2,000–1,000, 275–2,868, 275–2,250, 0–3,820, 0–2,407, 0–3,140, 1,950–1,015m.

DISCUSSION

All stations at which deep water copepod species were found at the surface were in a group centred on stations 87 and 100 (Fig. 3). These stations were near the southwest end of the Elingamite Channel which runs southwest-northeast at a depth of about 200m across the South Maria Ridge (van der Linden, 1968) extending from Cape Maria van Dieman in a northwesterly direction. The Elingamite Channel cuts off Three Kings Islands from the continental shelf. Stations exhibiting anomalous copepod records lie in the same position as upwelling detected in November, 1954, February, 1955 (Garner, 1961) and September, 1966 (Stanton, 1969).