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Revision of the Genus *Micronereis* (Polychaeta: Nereididae: Notophycinae)

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ABSTRACT. The genus *Quadricirra* Banse, 1977 is not recognized, since its principal diagnostic character, the presence of accessory parapodial cirri, is sexually dimorphic and cannot be correlated with other characters; thus *Micronereis* is the sole genus of the subfamily Notophycinae. A new species, *M. piccola,* is described and *M. siciliensis* and *M. bodegae* are synonymized with *M. variegata* and *M. nanaimoensis* respectively. A key to males and descriptions of all species are provided. The Notophycinae appears to be the most derived subfamily of Nereididae, characterized by a combination of epitokal modifications retained from their nereidid relatives and specializations acquired as members of the meiofauna.

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The polychaete family Nereididae is divided into four subfamilies (Banse, 1977a, b): the Nereidinae, Namanereidinae, Gymnonereidinae and Notophycinae. Banse (1977a) recognized the latter subfamily, originally proposed as Notophycidae by Knox and Cameron (1970) for *Notophycus* only, to include the genera *Micronereis* (and its synonyms *Notophycus* and *Phyllodocella*) and *Quadricirra*. *Quadricirra* Banse, 1977 was erected for *M. halei* Hartman, 1954 from South Australia and an indeterminate species from the Suez Canal that had been reported as an aberrant specimen of *M. variegata* by Fauvel (1927). *Quadricirra* was distinguished from *Micronereis* by the presence of accessory cirri on the lower notopodia and upper neuropodia in the former genus and their absence in the latter. A new species from north-west Australia was described as *Q. bansei* by Hartmann-Schröder (1979). The latter author recognized that the accessory cirri were present only in the males of *Q. bansei* and amended the genus accordingly.

While identifying specimens of Notophycinae I realized that the presence of accessory parapodial cirri is a male epitokal modification. Epitoky is characteristic of the Nereididae; most species metamorphose and swarm for breeding (Clark, 1961). Epitoky in species of Notophycinae has been overlooked, since the changes are relatively minor compared to some other nereidids. However, as Clark (1961:200) pointed out: "The structural modifications associated with epitoky may be no more than an elongation of the chaetae, or it may involve the wholesale reconstruction of the musculature and modification of the sense organs as well as the enlargement of the parapodia and replacement of the chaetae."

Although notophycines have a wide geographical distribution (Fig. 1), not many specimens have been reported. All known species are small (up to 15 mm) with relatively few segments (up to 26), and are thus members of the meiofauna. The rarity of their collection is attributed to their small size and preferred habitat. Most specimens have been collected in the littoral zone or in lagoons in depths from 0 to 3 m, sometimes by scuba divers with hand-held corers. The deepest record is that of a specimen of *M. eniwetokensis* which was collected from a depth of 30 m (Reish, 1961). The worms are generally associated with algae, which appear to be their main food source.

The morphology and taxonomy of the Notophycinae have been unclear. The aim of this paper is to examine and describe the characteristics of the notophycines in order to distinguish features held in common with other nereidid subfamilies from those that arose as meiofaunal adaptations, and to review their taxonomy and to provide descriptions for all known species.

Materials and Methods

The material examined was loaned by and/or is deposited in the following institutions: Allan Hancock Foundation, University of Southern California, Los Angeles (AHF); Australian Museum, Sydney (AMS); British Museum (Natural History), London (BM); CSIRO Division of Fisheries and Oceanography, Cronulla (CSIRO); Canterbury Museum, Christchurch