Contribution to the Taxonomy of the Muricidae

(Gastropoda: Prosobranchia)

BY

WALTER OLIVER CERNOHORSKY

Auckland Institute and Museum, Auckland, New Zealand

(I Plate; I Text figure)

IN A RECENT PAPER, entitled "Some comments on Cernohorsky's 'Muricidae of Fiji'", E. H. VOKES (1970) recorded her disagreement with certain points pertaining to the taxonomic treatment of species in "The Muricidae of Fiji" (CERNOHORSKY, 1967). This particular paper was presented as a faunal monograph and not a taxonomic revision of the family, and therefore no attempt was made to locate and critically examine all relevant type material. In the meantime, however, the writer had the opportunity to examine some of the types of taxonomically unstable species, and Mrs. Vokes' paper affords the opportunity to publish relevant notes and at the same time discuss points where disagreement seems to prevail. I wish to point out that in the case of species which are not represented by extant type material and are defined by often ambiguous illustrations in old iconographies, the identity of such species will be subject to dispute. Very often little factual evidence can be presented in discussions of controversial taxonomic points, and in these cases interpretations should be based on personal opinions. Disagreement between Mrs. Vokes and myself seems to persist on the following points:

1. The type species of Murex Linnaeus, 1758, is Murex tribulus Linnaeus, 1758, by subsequent designation of GRAY, 1847. MONTFORT'S (1810) designation of M. pecten Montfort, 1810 (non Lightfoot, 1786) is not eligible under article 69(a)(iv) of the Code of the ICZN, since MONTFORT (op. cit.) did not synonymize his new species with M. tribulus Linnaeus; his description of M. pecten is sufficient evidence that Montfort believed his new species to be distinct from M. tribulus Linnaeus.

2. Only detailed population studies can confirm the validity of *Murex scolopax* Dillwyn, 1817, as a biospecies. The characters of buttressed varices and presence or lack of intercalary spines are variable features in species of the *M. tribulus* complex.

I tend to agree with DODGE (1957) rather than Vokes that *Murex nigrispinosus* Reeve, 1845, is a colour form with dark-tipped spines of M. tribulus Linnaeus.

3. I agree with Vokes in considering Murex penchinati Crosse, 1861, to be a distinct species and not a form of either M. brunneus Link, 1807, or M. huttoniae B. Wright, 1878. The holotype of M. penchinati (Figure 6) is in the



Figure 12

Radula of Chicoreus penchinati (Crosse). Rachidian and lateral tooth. Hazlewood Island, Queensland.

British Museum (Natural History), London, and measures 40.6 mm in length and 21.4 mm in width; the colour is not bright pink as presumed by Vokes, but light fawn with only a trace of pink on the early whorls. The intervarical nodes are longitudinally oriented nodules upon the spiral cords which have the appearance of slender axial ribs, one smaller, the other larger, on the earlier whorls; the columella is smooth, and the outer lip has 12 denticles, with the inner 10 denticles grouped in pairs. Originally described from the Ryukyu Islands and reported from Nagasaki by DUNKER (1882), we have examined specimens of Chicoreus penchinati from Hazlewood Island, Whitsunday group, Queensland, Australia (leg. R. Carey). The Queensland specimens (Figure 7) have 2 to 3 longitudinally oriented rows of intervarical cordal nodes in comparison to the single swollen node of C. brunneus (Link), and the colour is light fawn or light yellowishbrown with a slight pink hue. The species has been illustrated by RIPPINGALE & McMICHAEL (1961, plt. 12, fig. 10) under the name *Chicoreus huttoniae* Wright.

4. I do not consider Murex aculeatus Lamarck, 1822, to be either a primary or secondary homonym of Aranea aculeata Perry, 1811. Originally described in different genera, M. aculeatus Lamarck belongs in the genus Chicoreus Montfort, 1810, whereas A. aculeata is assigned to Murex s. str.

Article 20 of the Code of the ICZN is applicable only to genus-groups and not to species-groups, and *Muricites* Schlotheim 1820 (= Gesner, 1758), although an unavailable name, would preoccupy any subsequent identical specific name in combination with the genus-group *Muricites*. *Muricites aculeatus* Schlotheim, 1820, does not preoccupy *Murex aculeatus* Lamarck, 1822, as stated by VOKES (*op. cit.*). As far as species-group names are concerned, even a one-letter difference in the generic name with which the species-group names are in combination, is sufficient to prevent homonymy. Article 57(d) of the Code makes no exception for article 20 or 56(b) in this case.

5. The taxonomy of Murex capucinus Lamarck, 1822 (non Purpura capucina Röding, 1798) is somewhat more complicated due to an error in identification of the Lamarckian taxon. According to Rosalie de Lamarck's annotation on the left hand margin of her father's copy of volume 7 of the "Histoire naturelle des animaux sans vertèbres" (see CERNOHORSKY, 1969), Lamarck had 3 specimens of Murex capucinus in his collection at the time of description. Lamarck's indicated size for one of his larger specimens was '4 pouces' and '9 lignes' (= 128.2 mm), and only this specimen which bears the registration number 1099/23 and which has been marked as "Type" by a former curator, is in the Muséum d'Histoire

Naturelle, Geneva. This specimen, which is a bona fide syntype, is here designated as the lectotype of Murex capucinus Lamarck, 1822; the specimen measures 124.7 mm in length, and it is the same specimen for which LAMARCK (1822) gave dimensions and on which he based his description. At first glance the frondless varices give the impression of a specimen of M. capucinus of authors, but closer examination shows the type to be a very worn specimen which is twice the size of M. capucinus, dark brown in colour, with darker brown, numerous and finely nodulose spiral cords on whorls with additional smaller spiral threads between the main cords; the body whorl has a large intervarical swelling with an indication of a much smaller one next to it; the aperture is white and the outer lip has 12 small denticles.

The lectotype of *Murex capucinus* Lamarck is probably a large and worn specimen of M. torrefactus Sowerby, 1841, but certainly not the M. capucinus auctt. for which the name M. permaestus Hedley, 1915 is available.

VOKES (1964) considered Purpura capucina Röding, 1798 to be probably the species Murex adustus Lamarck, 1822 (= M. brunneus Link, 1807), whereas VOKES (1970) suggests that Purpura capucina Röding is a composite species consisting of Murex triqueter Born, 1778 and M. quadrifrons Lamarck, 1822. My own interpretation of the figure in MARTINI (1777, plt. 105, fig. 994) was M. capucinus auctt., based on Martini's locality record of "East Indies," which would exclude the West African M. quadrifrons, and on the author's statement that the specimen figured in plate 105, figure 993 came from the Bolten collection and his own (figures 993 and 994 were combined under one heading description by Martini). To maintain taxonomic stability and to prevent Murex capucinus Lamarck, 1822 from being utilized as a senior synonym of M. torrefactus Sowerby, 1841, it is desirable that a figured lectotype be designated in the absence of

Plate Explanation

Figure 1: Murex capucinus Lamarck, 1822. Lectotype, MHNG 1099/23. Locality unknown ("Océan indien" on label). Length 124.7 mm

[MHNG = Muséum d'Histoire Naturelle de Genève]

Figure 2: Murex lignarius A. Adams, 1853. Lectotype, British Museum (Natural History), London, coll. Cuming. West Africa. Length 55.3 mm

Figure 3: Murex trigonulus Lamarck, 1816. Syntype, MHNG, 1099/35. Locality unknown. Length 37.4 mm

Figure 4: Murex cumingii A. Adams, 1853. Lectotype, British Museum (Natural History), London, 1963817, coll. Cuming. Philippine Islands. Length 58.1 mm

Figure 5: Murex phyllopterus Lamarck, 1822. Holotype, MHNG, 1099/27. Locality unknown ("Océan indien" on label). Length 83.4 mm

Figure 6: Murex penchinati Crosse, 1861. Holotype, British Museum (Natural History), London, coll. M. Thomas. Baie de Nafu, îles Liou-Tcheou [= Ryukyu Islands]. Length 40.6 mm

Figure 7: Chicoreus penchinati (Crosse). Hazlewood Island, Whitsunday group, Queensland, Australia (leg. R. Carey). Length 40.7 mm Figure 8: Murex rubridentatus Reeve, 1846. Locality unknown (from REEVE, 1846, plt. 36, fig. 186b)

Figure 9: Murex secundus Lamarck, 1822. Lectotype, MHNG, 1099/43/1. Locality unknown ("Océan indien" on label). Length 44.4 mm

Figure 10: Homalocantha secunda (Lamarck). Port Hedland, West Australia (leg. G. M. Hansen). Length 25.0 mm

Figure 11: Murex uncinarius Lamarck, 1822. Holotype, MHNG, 1099/31. Locality unknown ("Océan indien" on label). Length 24.6 mm





existing type specimens. In view of the different specific identifications of *Purpura capucina* Röding by Vokes (1964 and 1970) and CERNOHORSKY (1967), Röding's taxon should be considered a *nomen dubium*.

The confusion between the West African Murex quadrifrons Lamarck, 1822 and the Indo-Pacific M. capucinus auctt. (= M. permaestus Hedley) began with REEVE (1845) who considered *M. quadrifrons* to be only a 4varicose variant of M. capucinus auctt. Lamarck's holotype of M. quadrifrons is in the Muséum d'Histoire Naturelle, Geneva, no. 1099/45; the type measures 70.2 mm in length, and it is the specimen which has been figured by KIENER (1842) on plate 34, figure 1 as M. quadrifrons. Murex lignarius A. Adams, 1853 from West Africa is another synonym of M. quadrifrons Lamarck. The 2 syntypes of *M. lignarius* (one juvenile and the other adult) are in the British Museum (Natural History), London; the adult syntype (Figure 2), which measures 55.3 mm in length, is here selected as the lectotype of *M. lignarius* A. Adams, 1853. Although somewhat faded, the specimen is dark brown in colour with traces of the same colour on the columella and outer lip, with 2 intervarical axial nodes, strong spiral cords with 1 to 2 smaller intermediate threads, a smooth columella and 9 denticles on the outer lip.

The lack of a true broad flange on the anterior portion of the varices and the morphological similarity to *Chico*reus quadrifrons (Lamarck) suggest a location of Murex permaestus Hedley (= M. capucinus auct.) in the genus *Chicoreus* Montfort rather than in Naquetia Jousseaumè.

VOKES (op. cit.) considers the illustrations of Pterynotus (Naquetia) triqueter (Born, 1778) in CERNOHORSKY (1967, plt. 15, fig. 15) not to be this species but to represent Naquetia amanuensis (Couturier, 1907) instead. Cou-TURIER (1907) described his Murex (Chicoreus) triqueter Born, var. amanuensis as follows: "This variety obtained at Amanu [= Tuamotu Archipelago] differs from the type by the more slender and elongate anterior canal" [transl.]. The variety was not illustrated and the brief diagnosis based on a highly variable single character makes a recognition of a variant as a valid biospecies rather doubtful. Murex trigonulus Lamarck, 1816 also has a slightly more slender and longer siphonal canal than the Fijian specimens of Pterynotus (Naquetia) triqueter (Born) figured by me. The remaining syntype of Murex trigonulus Lamarck (there were originally 2 specimens in the collection according to R. de Lamarck) is in the Muséum d'Histoire Naturelle, Geneva, no. 1099/35 and measures 37.4 mm in length (Figure 3).

One of the syntypes of *Murex cumingii* A. Adams, 1853 from the Philippine Islands is almost a replica of the specimen of *Pterynotus (Naquetia) triqueter* (Born) figured from the Fiji Islands. The syntype under discussion is in the British Museum (Natural History), London, no. 1963 817 and measures 58.1 mm in length and 26.1 mm in width. It is a specimen of M. triqueter Born with the usual creamy-white and brown transverse bands, 4 narrow and nodulose intervarical axial ribs on the body whorl and 3 on the penultimate whorl; the columella is smooth, the outer lip has 14 denticles and a small square label is attached to the wall of the outer lip; the upper part of the ventral side of the body whorl is etched, having at one stage been attached with glue to a tablet. This specimen is here selected as the lectotype of Murex cumingii A. Adams, 1853 (Figure 4). It is my opinion that both M. trigonulus Lamarck and M. cumingii A. Adams are conspecific with M. triqueter Born and in case of a specific or infraspecific split would have chronological priority over M. triqueter var. amanuensis Couturier.

6. Nomenclatural confusion may arise through equivocal interpretations of often indifferent figures in old iconographies. VOKES (op. cit.) interprets the MARTINI figures (1777, plt. 106, figs. 995, 996) on which Purpura carneola Röding, 1798 and P. elongata Link, 1807 were based, as the species Murex saulii Sowerby, 1841; the author commented on the striking features of pink aperture and light brown colour of the species represented by Martini. MARTINI (1777), however, described the species as light brown with dark spiral bands and traces of a rosy colouring in the hollow digitations [transl.]. This description does not fit either M. torrefactus Sowerby, as presumed by Tomlin & Winckworth (1936) or Cerno-HORSKY (1967), nor M. saulii Sowerby, 1841 as suggested by VOKES (op. cit.), but is a perfect diagnosis for the species M. palmarosae Lamarck, 1822 (= Triplex foliatus Perry, 1810).

7. I concur with VOKES (op. cit.) that Murex phyllopterus Lamarck, 1822 is not conspecific with M. pinnatus Swainson, 1822 (= Purpura alata Röding, 1798), but at the same time I disagree with her suggestion that M. phyllopterus is conspecific with M. rubridentatus Reeve, 1846. Lamarck's holotype of M. phyllopterus (the only specimen he owned according to R. de Lamarck) is in the Muséum d'Histoire Naturelle, Geneva, no. 1099/27 (Figure 5). The type measures 83.4 mm in length, is creamywhite in colour, the 2 intervarical axial ribs are short, angulate, and extend over only 3 spiral cords, the columella is smooth and the outer lip has 8 denticles + 1 small intercalate one. Murex phyllopterus Lamarck and M. rubridentatus Reeve (Figure 8) are in my opinion not only different species but belong in different subgenera.

Despite Vokes' claim that Murex pinnatus Swainson (= Purpura alata Röding) is non-denticulate, speci-



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Cernohorsky, Walter Oliver. 1971. "CONTRIBUTION TO THE TAXONOMY OF THE MURICIDAE GASTROPODA PROSOBRANCHIA." *The veliger* 14, 187–191.

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