DESCRIPTION OF CHICOREUS RAMOSUS SHELLS, WITH NOTES ON CHICOREUS TORREFACTUS

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INTRODUCTION

At the First Workshop of the TMMP, Chantaramsuky & Nateewathana (1991) introduced a general description scheme which should be applied on Chicoreus ramosus by the TMMP workers. Our reason for making the description scheme was that we experienced serious difficulties with published descriptions when we first tried to identify muricids using available iconographic literature of various origin. We even had trouble with the outstanding book on muricids by Radwin & d’Attilio (1976), which we regard as the best source available, as far as descriptions of muricids is concerned. For example these authors describe Chicoreus ramosus as having one shoulder spine and 4 somewhat shorter, straighter spines of equal length. Two similar spines are developed on the siphonal canal. However, the illustration of Chicoreus ramosus by Radwin & D’Attilio shows 5 spines below the shoulder spine.

According to our concept of spines, the specimens from Thai waters carry a shoulder spine and 5-6 shorter spines of different lengths. Furthermore, 3 spines of different lengths are developed on the siphonal canal.

Invariably we asked ourselves if we had identified our specimens correctly, or if the differences could be caused by some undescribed geographical variation, or if we simply interpreted occurrence of spines and spinelets in a different way thereby arriving at different counts of spines. At the beginning of the TMMP we felt that we had to use a system of numbering of the spines to facilitate comparisons of, e.g. short and long spined forms of Chicoreus ramosus. In this paper we report our system.

RESULTS

Spiral Patterns of Spines

Figure 1. Chicoreus ramosus (A) and Chicoreus torrefactus (B), apical views. Positions of shoulder spines marked with filled circles. Varices marked with lines from shoulder spines across the whorls.

Fig. 1 shows Chicoreus ramosus and Chicoreus torrefactus in apical views. The position of the shoulder spine is indicated by a filled circle. Roughly, both species add one third of a whorl per growth stage. However, we measured the number of degrees between two varices to be 102.8 degrees per growth stage in C. ramosus, against 110 degrees in C. torrefactus. The effect of this difference of about 7 degrees is marked. In C. ramosus the shoulder spines are positioned along the same axial line for each 7 growth stages, against 10 growth stages in C. torrefactus. The visual impression when viewed from the top of the shell is that C. torrefactus has 3 rows of spines and 3 rows of intervarical nodes extending in a spiral arrangement from the apex to the siphonal canal, while the spiral arrangement is less obvious in C. ramosus. In the latter species, the major intervarical nodes are positioned below the
Figure 2. *Chicoreus ramosus*. Schematic drawing of positions, relative lengths, and system used to identify major spines (M1-6), minor spines (M1-xii), spines on previous body whorls (P1-ii), lateral spine (L1), cords (C1-3), intervarical nodes (N1-3), labial tooth (T), and anal sulcus = as.

shoulder spine on whorls deposited 3 growth stages earlier.

Spines on the Body Whorl

Fig. 2 shows counts of spines on the body whorl of *C. ramosus*. We distinguish between major spines (M1-6) which project laterally from the varix and minor spines (spinelets) (Fig. 2: M-i to M-xii) which are smaller and bent downwards. Major spines on the siphonal canal are labelled S1-3. Deviations from this pattern are often found at the transition between the aperture and the canal. Occasionally the minor spine numbered M-vi in Fig. 2, is strong and projecting like a major spine. In such cases it should be identified as major spine numbered M7. Similarly the minor spine numbered M-viii in Fig. 2, may project as a regular spine on the siphonal canal. In such cases we would count 4 canal spines instead of the normal 3 spines.

The shoulder spine M1 carries a well developed lateral spine referred to as L1. Each major and minor spine will carry small spines which have been omitted from counts presented in this study.

The intervarical nodes are labelled N1-3. The node N1 is positioned at the same spiral cord as M2, while N2 & N3 are on the same cords as M3 & M4, respectively.

The labial tooth is labelled T, the anal sulcus = as, and the 3 cords positioned between the anal sulcus and the shoulder spine are termed C1 to C3. When a new growth stage is added, the major spines M1 & M2, and the minor spine M-ii, are left on the shell which was deposited 3 growth stages earlier. These spines are referred to as P1, P2 & P-ii.

Description of *Chicoreus ramosus* From THAI Waters

In the following description we have paraphrased Radwin and D’Attilio (1976) according to our observations.

*Chicoreus ramosus* (Linneé, 1758)
*Murex ramosus* Linneé, 1758:747
*Purpura incarnata* Röding, 1798:142

The shell is very large (maximum total length 310 mm) and massively fusiform. The spire is low, consisting of one and a half nuclear whorls and 9 strongly convex postnuclear whorls. Apex is usually strongly corroded in large specimens. The suture is impressed, making the shell ventricose, particularly in long spined forms. In short spined forms, the suture appears as an inclined and unpigmented band connecting the whorls. The body whorl is large
and inflated. The aperture is large and broadly ovate, with a broad anal sulcus. The sulcus is delimited parietally by a strong spiral ridge extending along the columella into the shell from the level of the P1 (on the body whorl deposited 3 growth stages earlier) to a position inside the shell below the major intervarical node (deposited on the body whorl 4 growth stages earlier). The external edge of the sulcus is close to P1 in the long spined form, and clearly posterior to the P1 in short spined forms. The outer aperture lip is erect, projecting more or less strongly beyond the last varix. The outer aperture is coarsely dentate. Aperture teeth are located at the junction of the major and minor spines (Fig.2) A large labial tooth is developed at the junction of M-iv and M5. The labial tooth is strong and triangular in the short spined form, against slender and rectangular in the long spined form. Interiorly, the lip is weakly lirate, or nearly smooth, depending on the amount of shell material deposited during reinforcement of the shell. The upper part of the columellar lip is adherent above, extending further proximally than the lower part of the lip. The upper columellar lip covers the area above and below the position of the labial tooth on the whorl deposited 3 growth stages earlier. The lower part of the columellar lip is detached, weakly inclined outwards in the central portion, turning erect at the junction with the siphonal canal. The siphonal canal is broad, moderately long, tapering anteriorly, distally recurved, and narrowly open at its extreme right side.

The body whorl bears 3 foliately and spinosely ornamented varices. Additional axial sculpture consists of one narrow intervarical ridge and, generally, anterior to the major ridge, one, or rarely two, minor ones. Intervarical nodes on the major ridge are composed of a low node at the spiral cord continuing to M-i. However, this node is usually fused with the largest node (N1) located on the spiral cord continuing to M-2. A smaller node (N2) is found at the spiral cord of M3, while the smallest node (N3) is located on the spiral cord of M4. Spiral sculpture consist of broad, weak spiral cords and fine, scabrous threads. The surface is profusely scabrous on cords of the last varix, and at the base of the spines. Where the spiral cords intersect the varices, spines of variable morphology are developed. The short spined form carries short, foliated, distally bent, and ventrally open spines which are filled with lamellae along the leading edges. At intermediate spine lengths, the spines are partly closed and a smaller number of lamellae occur along the leading edge. Long spined forms have spines which are completely closed, the leading edges overlapping, and with few lamellae. Generally, the shoulder spine (M1) is strongly bent distally, but more or less straight spines occur. Although the spines may display widely differing lengths, the relative lengths of major spines on varices of the long, intermediate and short spined forms, generally occur in the following array of decreasing length: M1-M3-M4-M5-M6-M2-(M-7). On the siphonal canal the array of decreasing length is: S1-S2-S3-(M-viii). Minor spines (spinelets) are generally bent ventrally but occasionally they grow larger and project horizontally like major spines. The shoulder spine is fused with one larger, foliaceous spine (L1) positioned near the base of the spine. Three spiral cords (C1 to C3) are well developed on the shoulder. On the spire whorls the long shoulder spine and the next 2 spines are retained (P1& 2, P-ii).

Shell colour is white, stained intermittently with brownish-pink. The colour is strongest on the intervarical nodes and on the crests of the spiral cords and threads. The apertural margin is suffused with light to medium red or orange-red, the colour covering the entire columella, the labial tooth, and a narrow band at the edge of the interior of the outer lip.

The species occurs generally throughout the entire Indo-West Pacific.
REFERENCES


Cannibolism in Chicoreus ramosus — A view of the hole on the dorsal side