ISSN 0738-9388

Volume: 48 THE FESTIVUS ISSUE 3

Some spotted cone shells (subfamily Conilithinae) from the East Pacific region

John K. Tucker
Illinois Natural History Survey (Retired)
731 Cantonment, Rantoul, Illinois 61866
johntucker@gtewc.com

INTRODUCTION

Compared to the Western Atlantic cone shells, there are relatively few East Pacific cone shells. Tenorio, *et al*. (2012) identified 44 species that they placed in two families containing 21 genera. Most of the species (31 species) belong in the family Conidae. Another 13 species are members of the family Conilithidae. In contrast Kohn (2014) listed more than 50 valid species of cone shells from the Western Atlantic despite excluding species endemic to Brazil and those described after 2011. It seems likely then that there are about twice as many Western Atlantic cone shells as there are East Pacific cone shells.

Consequently the availability of a comprehensive volume on all of the East Pacific cone shell species (*i.e.*, Tenorio, *et al*., 2012) should simplify identifications for these species. It should be noted that no new species have been described after Tenorio, *et al.* (2012) was published. Contrast that record to the near overwhelming number of new species described from the Western Atlantic, West African, and Indo-Pacific regions. Their validity is not the issue here, but their existence makes cone shells difficult to study for those that do not have access to all of the primary literature, something that most collectors do not have.

Despite the relative stability of the taxonomy of the East Pacific species, some problem areas seem to remain. A series of short articles are planned to address the most important problem areas in a simple format utilizing descriptive illustrations and figure captions rather than the full scale sort of descriptions. Such descriptions are already published along with comprehensive illustrations by Tenorio, *et al*. (2012). those interested in the East Pacific cone shells should consult that book.

This first article considers identifications for five species of spotted cone shells that belong in the Conilithidae (Figures 1 and 2, herein). The Conilithidae have radular teeth that do not have serrations or a terminating cusp (Tucker & Tenorio, 2009; Tenorio, *et al*., 2012; Figure 3, herein). These are species that Duda & Kohn (2005) included in their small major clade based on molecular phylogenetics. The molecular based phylogenetics were actually reproduced in an independent cladistic analysis of radular and shell anatomy done by Tucker & Tenorio (2009, text-fig.13).

REFERENCES

Chaney, H. W. 1987. A comparative study of two similar Panamic cones: *Conus ximenes* and *Conus mahogani.* The Veliger 29:428-436.

Duda, T. F., Jr. & Kohn, A. J. 2005. Species-level phylogeography and evolutionary history of the hyperdiverse marine gastropod genus *Conus.* Molecular Phylogenetics and Evolution 34:257-272.

Kohn, A. J. 2014. *Conus* of the Southeastern United States and Caribbean. Princeton University Press, Princeton, New Jersey, xiii + 457 pp.

ISSN 0738-9388

Tenorio, M. J., Tucker, J. K., & Chaney, H. W. 2012. A Conchological Iconography:The Families Conilithidae and Conidae. The Cones of the Eastern Pacific. ConchBooks, Hackenheim, Germany, 112 pp.

Tucker, J. K. 1985. *Conus ximenes* J. E. Gray, 1839, *Conus mahogany* [sic] Reeve, 1843 and friends. Shells and Sea Life 17(8):201-202.

Tucker, J. K. 2007. *Conus ximenes* and C. *mahogani*: two similar but distinct species. The Cone Collector 2:5-10.

Tucker, J. K. & Tenorio, M. J. 2009. Systematic Classification of Recent and Fossil Conoidean Gastropods, with Keys to the Genera of Cone Shells. ConchBooks, Hackenheim, Germany, 296 pp.

Tucker, J. K. & Tenorio, M. J. 2013. Illustrated Catalog of the Living Cone Shells. MdM Publishing, Wellington, Florida, iv + 517 pp.

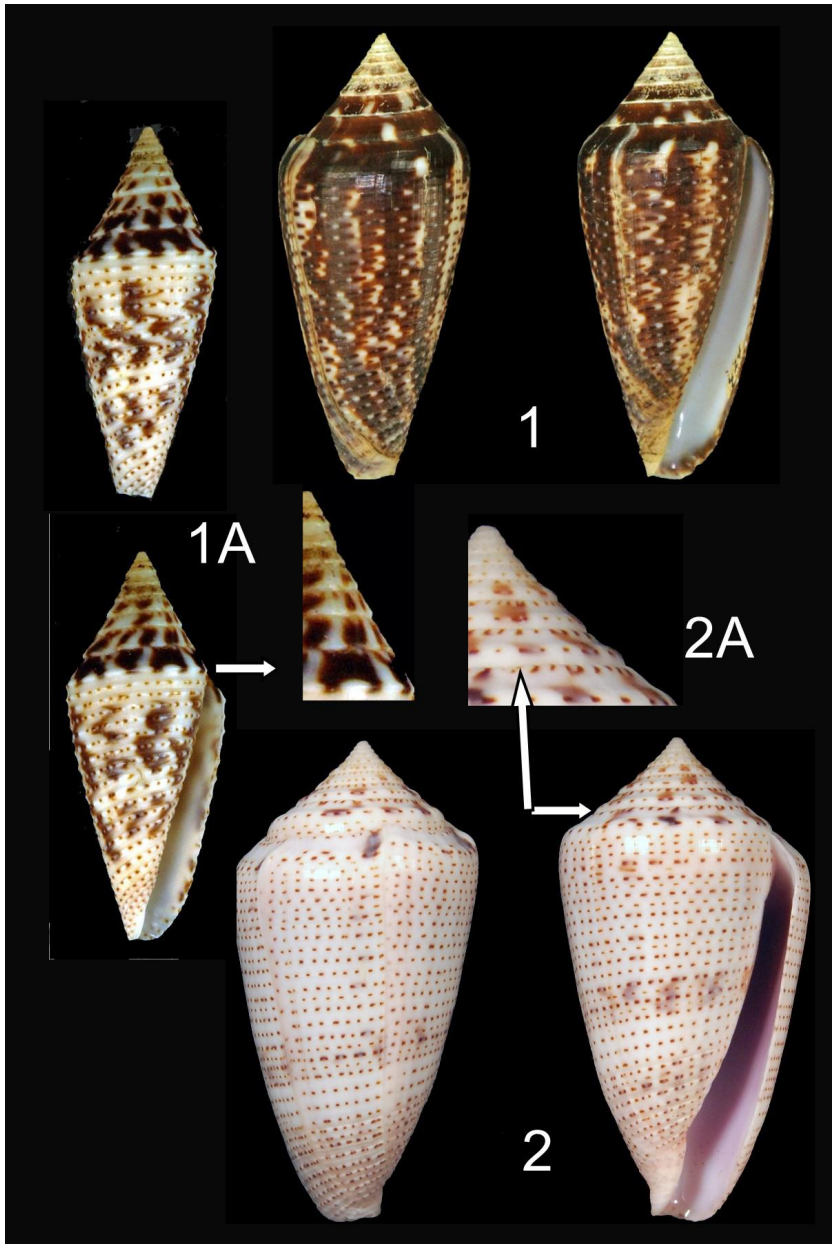

Figure 1. Two species of *Ximeniconus* from the East Pacific. Figure 1(1). Specimen of *Ximeniconus mahogani,* 34.4 mm shell length, from Venado Island, Panama, Illinois Natural History Survey (INHS) 44548. Note the absence of a row of small spots along the suture between adjacent whorls (Fig. 1(1A). Figure 1(1A). Specimen of *Ximeniconus mahogani,* 26.1 mm shell length, from Quevedo, Sinaloa, West Mexico (John K. Tucker collection (JKT) 6577) that is not so darkly colored as is the one shown in Figure 1(1). Body also has well-spaced, pustulose spiral ridges but spire is not scalariform and posterior notch is shallow confirming the identification as *X. mahogani* despite the light coloration. An enlargement of the spire is shown demonstrating the absence of a row of spots along the suture between adjacent whorls, which is present in *X. ximenes*. The spire whorls of *G. tornatus* are distinctly scalariform but like *X. mahogani* do not have that row of small spots along the suture (Fig. 3(4)). Figure 1(2). Specimen of *Ximeniconus ximenes* 52.6 mm shell length from San Felipe, Baja California, Mexico, Manuel J. Tenorio (MJT) collection. Arrow points to a row of small spots along the suture between adjacent whorls (also see enlargement in Figure 1(2A). These spots are only present in *X. ximenes* (Tucker, 1985 and 2007; Chaney, 1987). The enlargement of the anterior end of *X. ximenes* in Fig. 2(2B) shows the lack of development of an anterior notch (compare to Fig. 2(5A)).

ISSN 0738-9388

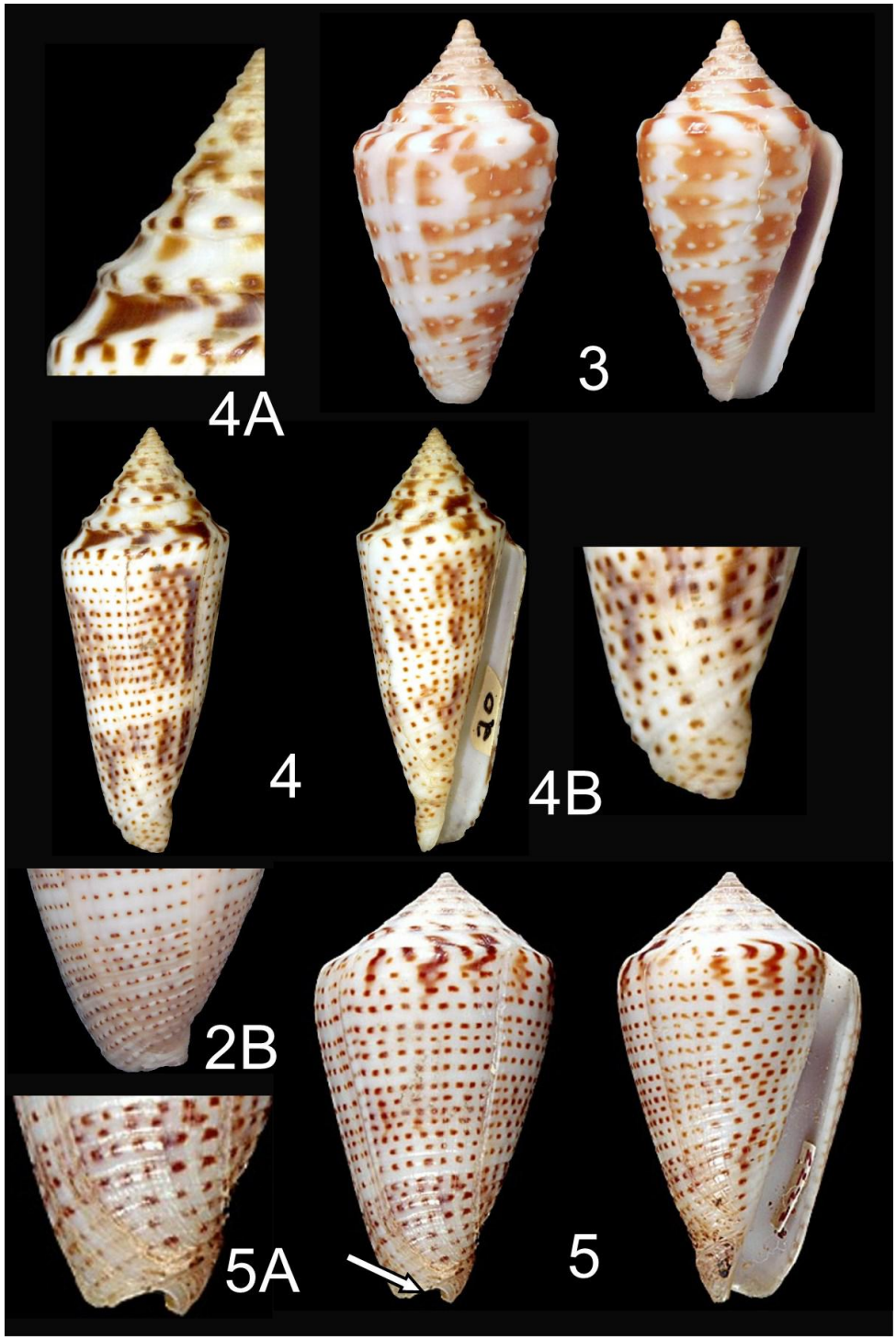

Figure 2. Three related species of Conilithinae from the East Pacific. Figure 2(3). Specimen of *Globiconus baccatus*, 23.3 mm shell length, from Golfo de Chiriqui, Panama MJT collection. Figure 2(4). Specimen of *Globiconus tornatus*, 38.1 mm shell length, dredged off Cabo San Lucas, Mexico, INHS 44502. The scalariform spire is shown in Fig. 4A and the absence of an anterior notch at the anterior end in Fig. 4B. Figure 2(5). Specimen of *Perplexiconus perplexus*, 31.4 mm shell length, from Isla Santa Clara, Mexico INHS 44742. Arrow points to the pronounced anterior notch located at the anterior end of the shell of *P. perplexus*. The anterior notch is enlarged in Fig. 5A. This structure is only well developed in *Perplexiconus*.

ISSN 0738-9388

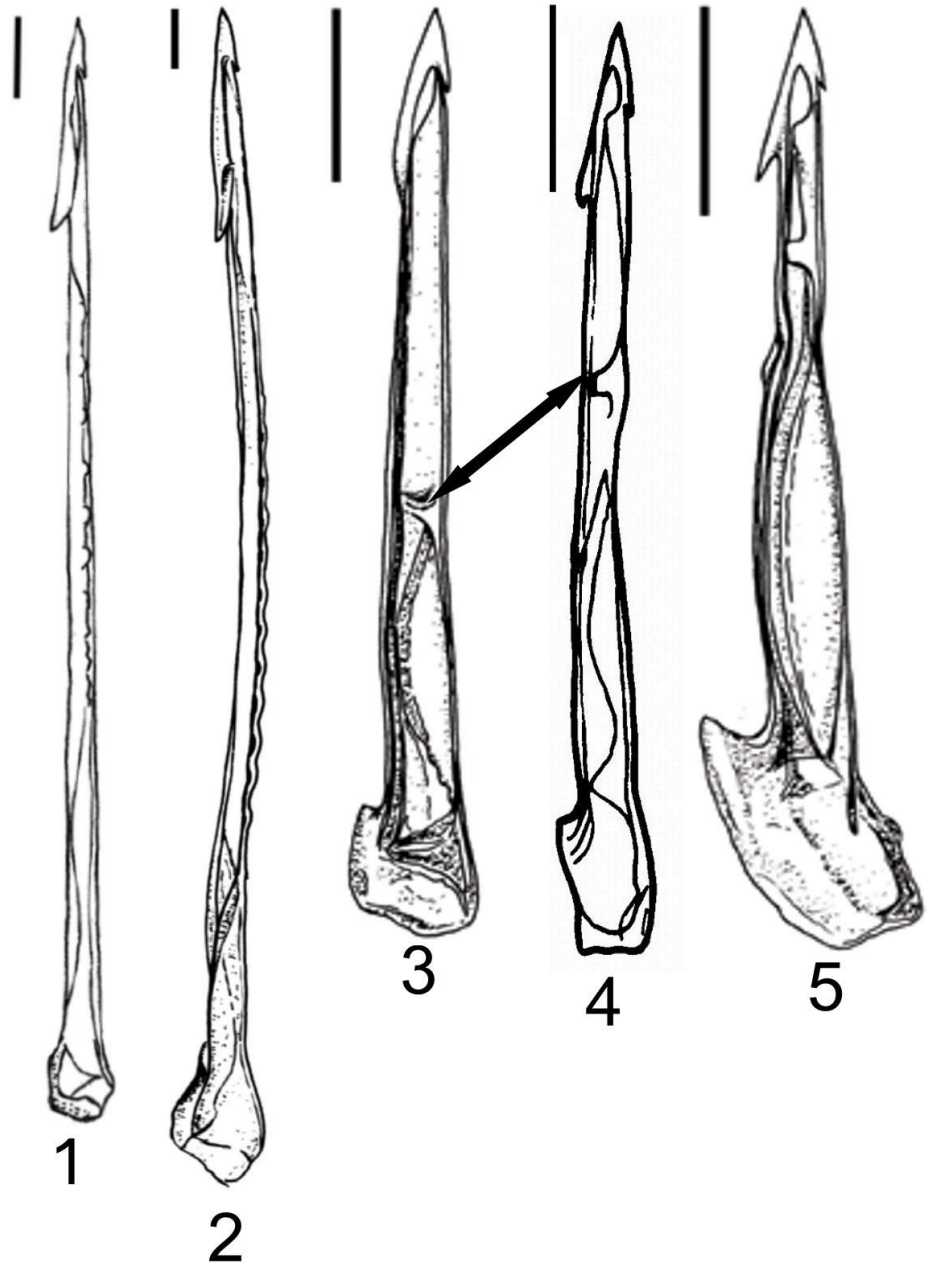

Figure 3. Drawings of the radular teeth of various spotted cones from the East Pacific all belonging to Conilithinae. All drawings were previously published by Tenorio *et al.*, 2012 or by Tucker & Tenorio, 2013. Drawings vary in scale. *See* Tenorio *et al*., 2012 for further information on sources and citations. Genus ***Ximeniconus*** Emerson & Old, 1962. Figure 3(1). *Ximeniconus mahogani* (Reeve, 1843). Sonora, Mexico. Specimen SBMNH 424126. Tooth Length (TL) = 1.07 mm; Shell Length (SL) = 38.5 mm; drawing from Tucker & Tenorio, 2009, pl. XV, fig. 10. Figure 3(2). *Ximeniconus ximenes* (J. E. Gray, 1839). Golfo de Panama. TL = 1.37 mm; SL = 45.2 mm, drawing from Tucker & Tenorio, 2009, pl. XV, fig. 9. Genus ***Globiconus*** Tucker & Tenorio, 2009. Figure 3(3). *Globiconus baccatus* (G. B. Sowerby III, 1877). Specimen SBMNH 150658, Islas Secas, Golfo de Chiriqui, Panama. TL = 0.54 mm; SL = 21 mm, drawing from Tenorio *et al*., 2012, pl. 1, fig. 1. Figure 3(4). *Globiconus tornatus* (G. B. Sowerby I, 1833). Gulf of Panama. TL = 0.5 mm; SL = 21.9 mm, drawing from Tucker & Tenorio, 2009, pl. XIII, fig. 22. Arrow points to the internal tubular structure characteristic of *Globiconus* found in the radula tooth of *G. tornatus* and *G. baccatus*. Genus ***Perplexiconus*** Tucker & Tenorio, 2009 Figure 3(5). *Perplexiconus perplexus* (G. B. Sowerby II, 1857). Specimen SBMNH 150818, Sonora, Mexico. TL = 0.45 mm; SL = 27 mm, drawing from Tucker & Tenorio, 2013, p. 27.