ADDITIONS TO THE NEW WORLD TURBINELLAS

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Inevitably, when one attempts a "complete" catalogue of any genus, there are almost certain to be omissions. Since the publication of *The Genus Turbinella in the New World* (Tulane Studies in Geology, vol. 2, no. 2, 1964), two species which were overlooked have come to the author's attention. In a desire to make the catalogue more nearly complete, they are here added.

TURBINELLA PERUVIANA COLOMBIANA (Clark)

Xancus peruvianus subsp. *columbianus* CLARK *in* CLARK and DURHAM, 1946, Geol. Soc. America, Mem. 16, p. 42, pl. 22, fig. 11.

Xancus peruvianus colombianus Clark. WOODRING, 1964, United States Geol. Surv., Prof. Paper 306-C, p. 286.

Diagnosis: "Shell heavy, spire less than height of body whorl (apical whorls and anterior end of the body whorl broken); sutures appressed; whorls with well-defined, upward-sloping shoulders, with narrow rather strongly appressed sutural collarlike area; shoulders ornamented by series of heavy rounded elongate nodes; there are 12 of these on anterior whorl of spire and about 15 on body whorl; surface also sculptured by series of faintly preserved spiral riblets; about 9 spirals on anterior whorl of spire; aperture elongate ovate; outer lip broken; inner lip covered by thin layer of callus; ridgelike callus growth in posterior angle of aperture; 3 heavy prominent plications on inner lip, the middle one of which is the longest and most prominent. Dimensions of holotype (the only specimen of the species found in the collections), U.C. Loc. S 60, spec. no. 35049: height of broken specimen about 86 mm, greatest width of body whorl 54.6 mm." (Clark and Durham, 1946)

Horizon: "Zone C", upper Eocene, Dist. of El Carmen, Bolivar, Colombia.

Discussion: This subspecies of *Turbinella peruviana* (Olsson) differs from the typical form in having a more inflated body whorl and a wider and more strongly sloping shoulder. The nodes on the shoulder are heavier and more pronounced. However, these distinctions are slight and it is possible that the two forms are synonymous, as they occur in beds which are considered by Clark and Durham to be equivalent in age.

TURBINELLA BUCCINA (Olsson and Richards)

Xancus buccina OLSSON and RICHARDS, 1961, Notulae Naturae, no 350, p. 9, pl. 2, fig. 1.

Diagnosis: "The shell is large or medium sized, solid, rather slender with a high spire of several whorls. The whorls have a low shoulder sloping upward and armed with a row of low spines or nodes and placed about one-third the whorl interval below the upper suture. There are about 14 nodes along the shoulder on the penultimate whorl and about 16 on the last whorl. The body whorl is large, produced forward into a straight, stout anterior canal, the end broken off in the type specimen. In the middle zone, the sides of the body whorl are fairly straight and wide and then slope rather sharply into the contour of the anterior canal. The columellar plaits, 3 or 4 in number, are narrow and sharp but are too deeply buried in matrix to show well." (Olsson and Richards, 1961)

Dimensions of holotype: height 105 mm, diameter 51 mm.

Holotype: ANSP 30813.

Horizon: Upper Oligocene. Borchina, Goajira [also spelled Guajira and Goagira] Peninsula, Colombia.

Discussion: The type and apparently only known specimen of this species is worn and imperfect, and its affiliations are therefore uncertain. In general it most closely resembles *Turbinella textilis* (Guppy) from the middle Miocene of Jamaica, being, however, considerably more slender in outline. Because of its poor preservation, and especially because of the lack of the nucleus, it seems

best at this time not to attempt assignment to any particular lineage.

Almost simultaneously with the publication of *The Genus Turbinella in the New World*, the third part of Woodring's work on the paleontology of the Canal Zone appeared. In this paper he figures and discusses four species of *Turbinella* which occur in the Canal Zone. These are: *T.* cf. *peruviana* (Olsson) from the Gatuncillo Formation (middle Eocene); *T.* cf. *rex** (Pilsbry and Johnson) from the Culebra Formation (lower Miocene); *T. valida** G. B. Sowerby from the Gatun Formation (middle Miocene); and *T. falconensis* (H. K. Hodson) also from the Gatun Formation. This latter smooth species Woodring makes a subspecies of the strongly knobbed *T. valida* stating, "These two forms have the same pattern of weak, widely spaced spiral cords on the main part of the body whorl and the same pattern of somewhat exaggerated growth lines between the suture and the shoulder." (1964, p. 287). As these traits are found to a greater or less degree throughout the genus such an alliance does not seem justified.

* For a discussion of the identity of these two species the reader is referred to p. 47-48 of the author's previous *Turbinella* paper.

LITERATURE CITED

WOODRING, W. P., 1964, Geology and paleontology of Canal Zone and adjoining parts of Panama. Description of Tertiary Mollusks (Gastropods: Columbellidae to Volutidae): United States Geol. Surv., Prof Paper 306-C, p. 241-297, pls. 39-47, Table 1.

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