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CONTRIBUTIONS
TO THE
TERTIARY FAUNA OF FLORIDA,

WITH ESPECIAL REFERENCE TO THE
MIOCENE SILEX-BEDS OF TAMPA

AND THE
PLIOCENE BEDS OF THE CALOOSAHATCHIE RIVER.

BY
WILLIAM HEALEY DALL, A. M.,
Paleontologist to the U. S. Geological Survey.

PART I.
PULMONATE, OPISTHOBRANCHIATE AND
ORTHODONT GASTROPODS.

SUPERORDER STREPTONEURA.
Order CTENOBRANCHIATA.

Superfamily TOXOGLOSSA.

FAMILY TEREBRIDÆ.

Genus *TEREBRA* Bruguière.

Section *Acus* (Humphrey) Gray.

Terebra (Acus) dislocata Say.

Cerithium dislocatum Say, Journ. Acad. Nat. Sci. Phila., II. p. 235, 1822.

Terebra Petittii Kiener, Mon. Ter., p. 37, plate xiii. figure 32, 1838.

Terebra rudis Gray, P. Z. S., 1834, p. 60.

Terebra dislocata Holmes, Post-Pl. Fos. S. C., p. 70, plate xi. figure 12, 1858.

Terebra carolinensis (Conrad, *ex parte*) Holmes, *op. cit.*, p. 70.

Terebra dislocatum Emmons, Rep. N. Car. Geol. Sur., p. 257, 1858.

Habitat, Eocene of Mississippi (var. *tantula* Conr.); Miocene of Virginia, North Carolina and of Ballast Point silex-beds, Florida; Pliocene of the Carolinas; Caloosahatchie beds; Post-Pliocene of the whole coast from Maryland southward. Recent from Maryland southward to Florida, the Bahamas and Venezuela.

This well-known form indulges in many variations and has a dwarf variety which indulges in a parallel series of variations. Some of its examples agree exactly with Eocene specimens of *T. tantula* Conrad; and specimens which have been identified by good authorities with *T. divisura* Conrad, though not the typical form of that species, are critically close to some of the recent shells. The specimen from Ballast Point is about half way between *T. tantula* and *T. protexta*. Miocene specimens from South Carolina are before me, agreeing exactly with the large typical *dislocata* var. *rudis*. Among the recent shells any one of the variations above noted can be duplicated.

Terebra (Acus) concava Say.

Turritella concava Say, Journ. Acad. Nat. Sci. Phil., V. p. 207, 1827; De Kay, N. Y. Moll., p. 113, 1843.

Cerithium concavum Ravenel, Cat. 14, 1834.

Acus concavus Dall, Rep. Blake Gastr., II. p. 63, 1889.

Caloosahatchie beds, not uncommon.

This species varies greatly. It has a stout form and a slender form. Both of these have varieties with weak and with strong sculpture. The typical form of *concava* has a strong nodulous rib on each side of the suture, with the middle of the whorl constricted and sculptured with fine spiral lines. This appears very distinct, but graduates toward the dwarf form of *T. dislocata* and the finely sculptured form of *T. protexta* when a sufficient number of specimens from a large range of coast are compared. The fossil specimens vary in exactly the same way that the recent ones do.

Terebra (Acus) protexta Conrad.

Cerithium protextum Conrad, Proc. Acad. Nat. Sci. Phila., iii. p. 26, 1845. Mörch, Malak. Blätt., xxiii. p. 121, 1877.

Acus protextus Dall, Rep. Blake Gastr., pp. 63, 65, 1889.

Miocene of the Carolinas and Florida; Pliocene of South Carolina and Caloosahatchie beds of Florida; Post-Pliocene of North Carolina and Florida. Recent on the coast of the United States from Cape Hatteras south to Florida and west to Texas, in 2 to 50 fathoms weedy bottom.

It is almost impossible to separate the varieties of *T. protexta*, *T. concava*, etc., from each other or from the fossil forms previously referred to, when a full series is examined. They intergrade almost without limit.

Terebra constricta H. C. Lea.

T. constricta H. C. Lea, Am. Journ. Sci., xl. p. 100, plate i. figure 18, 1841.

On an examination of the type of this species from the Claiborne sands, it turns out to be a trilineate *Cerithiopsis* or *Seila*, very closely related to *S. terebralis* C. B. Adams, of the recent fauna.

FAMILY CONIDÆ.

Genus *CONUS* Linné.

Conus planiceps Heilprin.

Plate 11, figures 5, 5a.

Conus planiceps Heilprin, Trans. Wagn. Inst. I. p. 110, fig. 48.

This species appears very uniform in its characters, and sufficiently distinct from *C. haitensis* Sowerby. I have seen no other species from the silex-beds at Tampa, while this is sent from Martin Station, about twelve miles north of Ocala, Florida, by Mr. Willcox, in a silicified rock, apparently referable to the Vicksburg horizon of Upper Eocene age. The Eocene *Conus sauridens* Conrad is closely related to this species.

Conus cruzianus n. s.

Plate 5, figure 12.

Shell elongate pyriform, thin, deeply spirally sulcated; whorls ten or twelve, apex acute, arising from a spire but little elevated, and having its slope concave in profile; sides of the shell with about twenty deep, uniform rounded sulcations, separated by slightly narrower cords; anteriorly these cords are rounded and finely striated spirally, midway they are a little flattened, and near the spine they are even marked with a shallow median sulcus; the channels are not striate between the cords, or but in the faintest manner; sides of the shell slightly swelling, falling away toward the spire, which is rounded at the margin, striated with fine distinct threads, and with a narrow striated