SOWERBY, G. B. (I), *in* J. C. MOORE, 1850, On some Tertiary beds in the Island of San Domingo: from notes by J. S. Heniker [Heneken], Esq., with remarks on the fossils: Geol. Soc. London, Quart. Jour., v. 6, p. 39-53, pls. 9, 10.

SPRINGER, STEWART and H. R. BULLIS, JR., 1956, Collections by the *Oregon* in the Gulf of Mexico: U. S. Dept. Interior, Spec. Sci. Rept.: Fisheries no. 196, 134 p.

SWAINSON, WILLIAM, 1840, A treatise on Malacology. 419 p., 130 figs. London.

TRYON, G. W., 1882, Manual of conchology, v. 4—Family TURBINELLIDAE: p. 66-73, pls. 19-21.

VOKES, E. H., 1965, Note on the age of the Chipola Formation (Miocene) of northwestern Florida: Tulane Stud. Geol., v. 3, no. 4, p. 205-208.

WARMKE, G. L., and R. T. ABBOTT, 1962, Caribbean seashells. 348 p., 44 pls., 34 text figs., 19 maps. Narberth, Penna.

WILLISTON, S. H., and C. R. NICHOLS, 1928, The geology of Venezuela and Trinidad, by Ralph Alexander Liddle. A review: Amer. Assoc. Pet. Geol., Bull., v. 12, p. 445-451.

WILSON, I. F., 1948, Buried topography, initial structures, and sedimentation in Santa Rosalía area, Baja California, Mexico: Amer. Assoc. Pet. Geol., Bull., v. 32, p. 1762-1807, 12 figs, 3 tables.

WINCKWORTH, RONALD, 1945, The types of the Boltenian genera: Malac. Soc. London, Proc., v. 26, p. 136-148.

WOODRING, W. P., 1928, Miocene mollusks from Bowden, Jamaica, Pt. 2: Gastropods and discussion of results: Carnegie Inst. Washington, Publ. 385, 564 p., 40 pls.

A NEW SPECIES OF *CHICOREUS* (MOLLUSCA: GASTROPODA) FROM THE MIOCENE OF SOUTHERN FLORIDA

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CHICOREUS (CHICOREUS) SHIRLEYAE

E. H. Vokes, n. sp.

Text figure 1

Diagnosis: The shell is fusiform, having ten whorls in the adult. Nucleus consists of two smooth whorls terminating abruptly in a small varix. Ornamentation of the early whorls is cancellate, formed by about ten axial nodes crossed by four spiral ridges. On about the third post-nuclear whorl varices begin to be formed by the increase in size of every third axial node, giving rise to three varices per whorl. The other nodes persist as intervarical swellings for about five post-nuclear whorls but gradually die out until the adult is more-or-less completely unnoded between the varices. The spiral sculpture, at first a series of four single ridges, soon develops a multitude of smaller threads covering the surface of the ridges and also the interspaces. With each successive whorl more threads are added until the entire surface of the shell is covered; however, the original four ridges are still present and form the large ramous spines at the varices. On the body whorl there are six such ridges with an additional three on the extended siphonal canal. Between each of the major spirals a slightly smaller, narrow ridge is developed in the later stages. The suture is deeply incised in the adult shell. Where the spiral ridges cross the axial varices large open spines are formed, each spiral thread opening into a digitation on the spine. The smaller intermediate ridges are not produced into spines but form small notches in the apertural lip. The outer lip is formed in advance of the varix and the open spines are closed over so that the edge is continuous, but crenulated with twelve small notches representing each of the spines and the intermediate ridges. When the next growth segment is added this labium remains as a distinct line in front of the varix. The most posterior spine is greatly reflexed, and cemented to the former whorl, forming a deep anal notch. The inner lip is smooth, standing free at the anterior end of the columella. The siphonal canal is long and recurved, partially covered over by a lamellar extension from the columellar wall. Each previous canal remains as a spur off the canal.

Dimensions of holotype: height 88 mm, diameter 39 mm.

Holotype: USNM 645147.

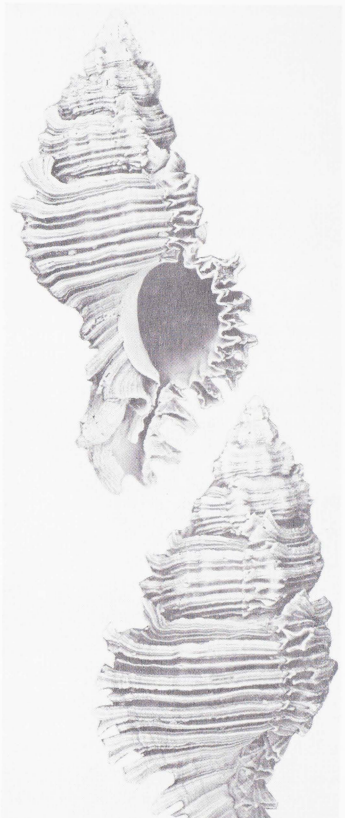
Type locality: TU 729, west side of Kissimmee Canal, east side of Kissimmee River, approximately ½ mile south of U. S. Corps of Engineers Structure 65-D, (S ½ Sec. 33, T36S, R33E), Okeechobee County, Florida. Paratype material from TU localities 728 and 730.

Horizon: Pinecrest Beds, Florida; upper Miocene.

Discussion: This new species is presently known only from a small area in southern Florida north of Lake Okeechobee. It occurs with the common and widespread Florida Miocene and Pliocene species, *Chicoreus floridanus* Vokes, and represents an offshoot of that line which failed to survive. *C. shirleyae* is readily distinguished from the more abundant *C. floridanus* by its narrow shape, more deeply indented suture, lack of pronounced varical swelling, and chiefly, by its deeply incised spiral ornamentation. This latter character is the most conspicuous feature of the species and gives the shell a very distinctive appearance.

As these two similar species were living in the same area at the same time it is assumed that there was some ecologic difference which separated them. Unfortunately, as *C. shirleyae* has no corresponding Recent form, we cannot determine what this difference might have been. Apparently there was some hybridization between the two species for a small percent of the specimens seen have the general shape of *C. floridanus* with the characteristic spiral sculpture of *C. shirleyae.* To give an idea of the percentage involved, from the type locality the Tulane collections contain 160 specimens of *C. floridanus,* 45 of *C. shirleyae,* and 4 "hybrids."

This elegant new *Chicoreus* is named in honor of Mrs. Robert C. (Shirley) Hoerle, of West Palm Beach, Florida, who first called to our attention the marvelous localities along the Kissimmee River where this species is found.



Text figure 1. *Chicoreus (Chicoreus) shirleyae* E. H. Vokes, n. sp. Holotype, X 1. USNM 645147; TU locality 729.

Locality Data

TU 728. Pinecrest Beds, spoil banks on west side of Kissimmee Canal, at U. S. Corps of Engineers Structure 65-D, (Sec. 33, T36S, R33E), Okeechobee County, Florida.

TU 730. Pinecrest Beds, embankment of Seaboard Airline Railroad, just west of Kissimmee River, east of Fort Basinger Station, (NW ¼ Sec. 20, T36S, R33E), Highlands County, Florida.