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but undescribed form from Vicksburg, complete the list of our known Eocene cones. C. gyratus, Morton, and C. claibornensis, Lea, are unrecognizable, and should be dropped. C. subsauridens does not appear to differ from C. sauridens, Conrad. C. granopsis, de Gregorio, appears to be identical with C. protractus, Meyer, but the type of C. granopsis is only 4 mm. long, and it may be a young C. sauridens. C. improvidus, de Gregorio, from an unmentioned (American?) locality, is not like anything known from Claiborne in American collections.

Only three species of cones are yet known from the Chesapeake Miocene: *C. adversarius*, Conrad; *C. diluvianus*, Green, and *C. marylandicus*, Green. The original locality of the latter is not known, and it has not recently been collected in Maryland, but occurs in Duplin County, North Carolina, and has by some accident been figured by Tuomey and Holmes, under the name of *C. diluvianus*, from South Carolina.

The cones of the old Miocene of Florida do not include any of the Antillean species described from the equivalent horizon, which is rather a surprise, but we find the three forms here described, with several well-marked varieties.

CONUS CHIPOLANUS, new species.

Shell double-conic, with a rather elevated spire of nine normal and about three lucid nuclear whorls; profile of the spire somewhat concave, turrited shoulder of the whorls sharply keeled, concave between the keel and the suture, without spiral grooving, but showing faint microscopic spiral scratches, the prominent sculpture of this area being the delicately arched lines of the anal fasciole, which are sometimes very conspicuous; the keel is wholly without nodules; sides in front of the keel straight, slightly concave toward the canal, smooth, except for incremental lines, polished anteriorly, with about nine sharp, channeled spiral grooves, besides some striations on the canal; the grooves are separated by wider interspaces and crossed by numerous elevated lines of growth, which only appear in the channels; each channel in the fully adult shell has a spiral row of faint, round tubercles close to its anterior margin; in the young the grooves sometimes cover the whole shell before the keel, and the nodules are often absent; in the adult the grooves cover somewhat less than half the whorl, while on the smooth part traces of five narrow, revolving color bands are sometimes visible, with wider interspaces; anal notch only moderately deep; outer lip thin, only moderately arched; aperture narrow, with nearly parallel sides; the pillar straight, thin, slightly twisted. Longitude of shell, 32; of spire, 7.5; maximum diameter, 15.5 mm.

Habitat.—Chipola beds (2213), Chipola River, Florida.

Types.—No. 113985, U.S. N.M.; and in the collection of Mr. Aldrich. This species recalls *C. interstinctus*, Guppy, of the Haitian Miocene, but is a smaller, more slender, and more delicate shell, without any grooving in the sutural fasciole. It is more nearly related to *C. mary*-

landicus of the newer Miocene, and to C. floridanus, Pliocene and recent, than to any of the Antillean fossils with which I have compared it.

CONUS ISOMITRATUS, new species.

Shell small, solid, short, stout, with a rather low spire of eight or nine whorls beside the nucleus; a single elevated thread runs at the shoulder, on which the suture is laid; between the sutures, which are deep and distinct, the whorl is convex, turgid, with only incremental lines; in front of the shoulder the sides are slightly swollen, the posterior half obsoletely spirally striate or smooth, anteriorly with distinct spiral threads and equal interspaces crossed by conspicuous lines of growth; the siphonal fasciole distinct, swollen, showing as a rounded ridge; outer lip straight, thin, sharp; anal notch shallow, aperture narrow, siphonal notch deep; pillar with the edge thickened and twisted, forming in well-developed specimens with the siphonal fasciole two obscure plaits; body with little or no callus. Longitude of shell, 28; of spire, 5; maximum diameter, 18 mm.

Habitat.—Chipola beds (2212, 2213), Chipola River, Florida, and Alum Bluff beds near De Funiak Springs (2238).

Types.—No. 113980, U.S. N. M.; and in the collection of Mr. Aldrich. The young of this species have nine or ten deep grooves, with narrower interspaces, covering a little more than the anterior half of the shell. These grooves during growth become gradually modified to the adult sculpture.

CONUS ISOMITRATUS var. SULCULUS, Dall.

Shell resembling the type, except that the sutural border or shoulder of the shell is flattened or excavated with a few or numerous spiral grooves upon its surface. It is also larger. Longitude of spire, 5; of shell, 38; diameter, 24 mm.

Habitat.—Chipola beds (2212, 2213), Chipola River, Florida.

Types.—No. 113924, U. S. N. M.

The transition from a concave to a turgid sutural border, from smooth to spirally grooved, is quite gradual, though the extremes have a very different aspect, and would, by some writers, be put in different sections of the genus. This species recalls *C. mus* of the recent fauna as much as any species. It is much shorter and stouter than the line which begins with *C. sauridens* et al., and is represented in the present fauna by *C. daucus*.

CONUS DEMIURGUS, new species.

Shell large, elongate, with a large, somewhat bulbous, nucleus, and about 10 subsequent whorls; spire low, in the young nearly flat, with a distinct but not channeled suture; shoulder of the whorl angular, the space between the sutures flattish or feebly excavated, sculptured with obvious lines of growth, crossed by few, faint, obsolete, spiral, traces;

sides of the whorl smooth, except for obsolete spiral lines, rather wide and irregularly spaced; in the anterior third they are stronger, but even there not very marked; some specimens seem to indicate a faded color-pattern of continuous, narrow, spiral lines, rather evenly and uniformly spaced; aperture narrow, of equal width, or nearly so; the anal notch moderately deep, the pillar straight, with a narrow callous part not showing any ridge or plait. Longitude of spire, 5; of shell, 65; diameter, 35; width of aperture, 6 mm.

Habitat.—Chipola beds (2211-2213), Florida.

Types.—No. 113920, U. S. N. M.; and in the Aldrich collection.

This species is the largest yet found in these beds, and among recent species finds its nearest analogue in *C. papilionaceus*, Hwass. It is a more slender shell than the latter, with more flattened spire and larger nucleus. It is a shell without striking characteristics, yet which will not fit in with any of the other forms of this horizon.

PTEROPURPURA POSTII, new species.

Shell of moderate size, with five whorls, beside the (decollate) nucleus, with three sharp, continuous varices extending down the spire and a single prominent intervarical nodule on the interspaces of the whorls; the last varix broader than any of the others, with a posterior angle, the front sculptured with fine crenulate imbricated lamellae, the back smooth, except for the ends of the spiral ribbing; spiral sculpture of (about 15 on the last whorl) low spiral ribb most prominent on the varices and on the intervarical nodules, the rather wide interspaces finely spirally striate; aperture small, subovate, the outer lip with about seven strong teeth; the body with a thin, smooth callus; suture appressed, obscure; canal open, narrow, not quite as long as the aperture; on the siphonal fasciole a single projecting remnant of an earlier canal is visible. Length, 38; of last whorl, 28; of aperture, 14; diam eter of shell, 20 mm.

Habitat.—Ballast Point, Tampa, Florida, old Miocene silex beds: a single specimen collected by E. J. Post.

Type.—No. 130349, U. S. N. M.

It is possible this should be referred to *Pterorhytis* rather than *Pteropurpura*, but there does not appear to be any long tooth on the edge of the outer lip as usual in the former genus.

Genus GYRODES, Conrad.

Subgenus GYRODISCA, Dall.

Shell like *Gyrodes*, but small, without any channel in front of the suture, the umbilical angle crenate by the transverse lamellar or fibrous sculpture: the nucleus small, prominent, glassy, the shell otherwise