

one valve; a second one with length 18.25 and height 16.50 mm).

The form figured by Maury (1917, p. 195, pl. 39, fig. 5) from the Early Pliocene Cercado Formation on the Rio Cana at Caimito, Dominican Republic, and identified as "*Mytilopsis domingensis* Recluz," a Recent species (described as *Dreissena domingensis*) from Haiti, differs in the broadly flaring and flattened dorsal edge of the valve. As noted by Weisbord (1964, p. 209) Maury's figured specimen is probably incorrectly identified as the Recluz species, which has recently been synonymized with the type species, *M. leucopneatus* (Conrad) (see Marelli, 1980, p. 12).

Mytilopsis lamellatus (Dall) (1898, p. 809, pl. 35, figs. 13-15) from the Late Pliocene Caloosahatchee Formation of Florida is similar to the present Chipola species, but differs in the broad angulation between the relatively straight anterior portion of the dorsal slope and the point where it begins to curve toward the posterior end. The ventral margin is also slightly more concave in most specimens, although some examples in the Tulane collection have a straight one, and one or two are even slightly convex. The growth lamellae on the surface of the larger specimens is also distinctive, but small forms of a size equivalent to the new species tend to have the lamellae only weakly developed, if at all.

The Bowden species *M. jamaicensis* Woodring (1925, p. 86, pl. 10, figs. 13, 14) has an angulate dorsal margin with the marginal groove on the left valve much shorter than present on *M. erimioecentus*.

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NOTES ON THE FAUNA OF THE CHIPOLA FORMATION - XXIX A NEW SPECIES OF *PANOPEA* (MOLLUSCA: BIVALVIA)

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Dall (1898, p. 829) reported the presence of *Panopea* Ménard in the fauna of the "Oligocene...of the Chipola River and Oak Grove...Florida," identifying the species as "*Panopea Whitfieldi*," a new name for "*Panopea Goldfussii* Whitfield" 1895, *non* Wagner, 1838. He repeated the citation as to the distribution in 1915 (p. 156, pl. 18, fig. 13) spelling the generic name *Panope* (see discussion below). Subsequently Gardner (1928, p. 237, pl. 36, figs. 11, 12) described the Oak Grove form as *Panope parawhitfieldi*, noting: "The Chipola species is ap-

parently distinct from the Oak Grove, differing in the more produced and attenuated posterior extremity. The material is too fragmentary to name."

The Tulane University collections from the Chipola Formation, now known to be Lower Miocene, Burdigalian, in age, contain several thin-shelled specimens (six of which are paired valves) in varying degrees of completeness, which are here referred to the new species *Panopea chipolana*.

Family HIATELLIDAE Gray, 1824

Genus PANOPEA Ménéard, 1807

Glycimeris LAMARCK, 1799, Mem. Soc. Hist. Nat. Paris, v. 7, p. 83 (*non Glycimeris* Da Costa, 1778; *Glycimeris* Lamarck, 1801, etc.).

Panope MÉNARD, 1807 (?January), Mémoire sur un nouveau genre de coquille bivalve-équivalente de la famille des Solénoides intermédiaire aux Solens et aux Myas..., p. 30.

Panopea MENARD, 1807 (April), Ann. Mus. Hist. Nat. Paris, v. 9, p. 135.

Panopaea LAMARCK, 1819, Hist. Nat. Anim. sans Vert., v. 5, p. 456.

Type species: By subsequent designation, Children, 1823, *Panopea aldrovandi* Ménéard, 1807 = *Mya glycimeris* Born, 1778. Recent, Mediterranean Sea and Atlantic coasts of Spain and Portugal.

Discussion: There has been considerable uncertainty concerning the generic name to be applied to the molluscan group to which the present and related species are to be assigned. Lamarck, in 1799, proposed the name *Glycimeris* for *Mya glycimeris* Born, but in 1801 applied the name to the taxonomic group presently referred to *Cyrtodaria* Reuss, 1801. Subsequently, it was noted that the name *Glycimeris* (spelled with two "y's") had been proposed as early as 1778 by Da Costa for the species to which that name is now formally applied, in place of *Pectunculus* Lamarck, 1799, which term had also been used by Da Costa in 1778 and now considered as representing a subgenus of *Dosinia* Scopoli, 1777.

The uncertainty resulting from Lamarck's two differing usages of *Glycimeris* early led to the proposal of the name *Panopea* (or *Panope*) by Ménéard de la Groye in 1807. According to Dall (1912, p. 34), "M. Ménéard states expressly that Lamarck agreed with him as to the necessity for a new name for the genus..." The term *Panopea* was used almost constantly from the date of its appearance in the Annales du Museum of Paris in April of 1807. But Dall in 1912 (p. 34) called attention to a pamphlet, dated as of January, 1807, in which the name was spelled *Panope*, a name based upon the Greek name for a mythologic sea nymph. According to Dall, the copy of the pamphlet in his collection contained annotations, in Ménéard's handwriting, concerning the April paper. Subsequent investigations revealed a second

copy in the library of the Museum d'Histoire Naturelle in Paris, which also bore Ménéard's annotations, plus evidence that another copy had been sold by a French bookseller in 1954; the latter, however, has not been traced. The weight of the evidence points to the conclusion that even though the pamphlet may have been printed in January, it probably was not distributed until somewhat later. Accordingly, in 1960 the writer and L.R. Cox, then Keeper of Invertebrate Paleontology at the British Museum, proposed that the problem be reviewed by the International Commission on Zoological Nomenclature and that the long-used term *Panopea* be placed on the *Official List of Generic Names* (see Vokes and Cox, 1961); the proposal was recently revived by R.V. Melville, Secretary of the Commission (1983) and presumably soon will be voted upon by the Commission members.

PANOPEA CHIPOLANA

H.E. Vokes, n. sp.

Text figures 1-3

Panope sp. indet., GARDNER, 1928, U.S. Geol. Surv., Prof. Paper 142-E, p. 238.

Description: Shell of moderate size for the genus (largest specimen in collection 92.4 mm long, 50.0 mm high), thin, inflated, inequilateral, widest subumbonally at anterior third of length; valves narrower and more broadly gaping posteriorly than anteriorly; low concentric undulations on and adjacent to the broad, flattened umbos that project only slightly above the dorsal margins; undulations dying out away from the umbones, with the surface marked mainly by low inconspicuous incrementals that tend to be somewhat more prominent toward the dorsal margins; some valves showing a very low broadly rounded posterior umbonal ridge extending posteriorly but dying out before reaching the valve margin; dorsal margin straight, anterior margin broadly rounded, passing gradually into a convex ventral one with posterior margin regularly rounded, only slightly more than half the width of the anterior one; lunule and escutcheon absent; ligamental nymphs projecting, relatively short for genus; a single, small, laterally compressed cardinal tooth in each valve; internal margins smooth; adductor scars relatively small, moderately prominent due to a slight thickening of the shell inside the relatively prominent pallial line; a deep posterior pallial sinus extending beyond the mid-length of the valve.

Holotype: USNM 402707; length 78.0 mm, height 38.4 mm, diameter, (paired valves) 16.1 mm.

Type locality: TU 549, east bank of Chipola River, about one-fourth mile below Four Mile Creek (NE 1/4 Sec. 32, T1N, R9W), Calhoun Co., Florida.

Discussion: Although not common, *Panopea chipolana* seems to occur throughout the formation. The holotype specimen is from Tulane locality 549, near the top of the formation as exposed on the Chipola River; other specimens, however, are from localities in the basal beds on Tenmile Creek (TU localities 546, 817, 830) and toward the central part of the formation on Farley Creek, near its mouth where it enters the Chipola River (TU localities 819, 825).

As noted by Gardner (1928, p. 237, 238) the present Chipola species differs from *P. parawhitfieldi* Gardner (1928, p. 237, pl.

36, figs. 11, 12) in its "more produced and attenuated posterior extremity...[with the] umbones more decidedly anterior...and the umbonal sculpture lacks the strength and regularity...of *P. parawhitfieldi*, and the sinus is produced to the vertical dropped from the beaks."

The Upper Eocene (Jackson) and Lower Oligocene (Vicksburg) "*Panopea*" *oblongata* Conrad (1848, p. 290 - see Dockery, 1982, p. 101, pl. 52, figs. 1a-c [Conrad's type], 6) seems more closely related to *P. parawhitfieldi* than to the present species. Conrad's type appears to be somewhat incomplete anteriorly, but the smaller form shown in Dockery's figure 6 has slightly more anteriorly located umbos, and more broadly convex ventral margin while maintaining a similarly broad posterior segment of the valve. All three of the above species differ from the later Tertiary and Recent forms in their proportionally more elon-



Text figures 1-3 (X 1). Holotype, USNM 402707. Fig. 1, interior of right valve; fig. 2, exterior of right valve; fig. 3, dorsal view of paired valves. Locality TU 549, Chipola River, Calhoun County, Florida.

gately narrow valves, less pronounced posterior gape, and narrower and much more elongated pallial sinus suggesting that these earlier species may have been able to retract their siphons.

LOCALITY DATA

The following Tulane University locality numbers are all in the Chipola Formation, Calhoun County, Florida.

546. Ten Mile Creek, about 1-3/4 miles west of Chipola River (NE 1/4 Sec. 12, T1N, R10W) (= USGS 2212, "one mile west of Bailey's Ferry").
549. East bank of Chipola River, about 1/4 mile below Four Mile Creek (NE 1/4 Sec. 32, T1N, R9W).
817. South bank of Ten Mile Creek, large gully on property of Mr. A. Sexton (SE 1/4 Sec. 12, T1N, R9W).
819. Farley Creek, 0.2 mile west of bridge of Florida Highway 275 (SW 1/4 Sec. 21, T1N, R9W).
825. Farley Creek at abandoned mill about 1/4 mile west of bridge of Florida Highway 275 (SW 1/4 Sec. 21, T1N, R9W).
830. Ten Mile Creek at power line crossing about one mile west of Chipola River (SE 1/4 Sec. 12, T1N, R10W).

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REVIEW

PALYNOSTRATIGRAPHIE ET PALEOCLIMATOLOGIE DE L'EOCENE SUPERIEUR ET DE L'OLIGOCENE DU BASSIN DE PARIS, by Jean-Jacques Châteauneuf. Mémoire du Bureau de Recherches Géologiques et Minières, no. 116, Orleans, France; 1980, 360 pp., atlas of 31 pls., illus., paper, \$59.00

This is a doctoral dissertation from l'Université Pierre et Marie Curie, Paris, pub-

lished as a part of the B.R.G.M. memoir series. The work consists of a palynological inventory of the spores, pollens, and Dinoflagellate cysts from the upper Eocene and Oligocene sediments of the Paris Basin and environs and their relationship to the stratigraphy, depositional environments, and paleoclimatology of this important region. It is thorough and well illustrated.

—H.C.S.