1210. Gurabo Fm., Río Gurabo, east bank, first bluff below the bridge on the road from Los Quemados to Sabaneta, Dominican Republic (= USGS 8544; Maury’s Zone B).

LITERATURE CITED


November 16, 1977

NOTES ON THE FAUNA OF THE CHIPOLA FORMATION—XXII
ON THE OCCURRENCE OF DOLICHOLATIRUS (MOLLUSCA:GASTROPODA)

EMILY H. VOKES
TULANE UNIVERSITY

The small genus-group for which the name Dolicholatirus is now employed has a lengthy geologic history, dating back to the late Cretaceous Owl Creek Formation of Mississippi. Here we see a curious species, named Dolicholatirus torquatus by Sohl (1964, p. 209, pl. 26, figs. 9, 10, 16, 17), that is to all indications a good case of ontogony anticipating phylogeny. The juvenile paratype (ibid., figs. 9, 10) is apparently a good Dolicholatirus, with two faint columellar plications. The columellar lip, if it was ever present, has been broken away, leaving behind a Fasciolaria-like aperture, but the overall shell shape is identical to the modern members of Dolicholatirus. However, the adult holotype (ibid., figs. 16, 17) has no visible plications as far into the aperture as it is possible to see without breaking away the shell and has an expanded body whorl that externally looks exactly like Fasciolaria (Triplofusus). This subgenus (type species: Fasciolaria gigantea Kiener) has three small plications at the anterior end of the columella, which is bent. The adult D. torquatus has a straight columella more like Dolicholatirus. Perhaps it is the ancestor to both lines.

Certainly by the Eocene the modern genus-group is well established. In the United States we see from the middle Eocene: “Latirus” singleyi Harris, 1895, and “L.” obtusus Johnson, 1899; from the upper Eocene, “L.” leaensis Harris, 1897; and from the Oligocene, “Turbinella” perexilis Conrad, 1847. In the Paleogene of Europe there are numerous species, including “Fusus”
funiculosus Lamarck, 1803, from the Eocene of the Paris Basin, and "Fusus" cognatus Beyrich, 1856, from the Oligocene of northern Germany.

After the Oligocene the line becomes much rarer, although world-wide in distribution. In the New World it is represented by a single species, "Latirus" exilis Gabb, 1873, from the Miocene beds of Santo Domingo. In the Old World we also see a single species from the middle Miocene of Italy, "Fusus" bronni Michelotti, 1847; type of the genus, and "Fusus" aciformis Tate, 1888, described from Australian beds originally thought to be Eocene but now known to be middle Miocene in age also.

In the United States the group has not been reported from the Oligocene up to the Recent where we see, among others, "Fusilatirus" pauli McGinty, 1955, a form very closely related to the Dominican Miocene form. Therefore, it was with some pleasure the genus was recognized in the fauna of the lower Miocene Chipola Formation of northwestern Florida. The line is extremely conservative, there being little change from the Eocene to the Recent species, but it was rather unexpected to find that the Chipola form is the same as that described by Gabb from Santo Domingo.

The shell of this genus is easily recognized by its long, perfectly straight, non-umbilicate anterior canal, resembling that of Fusinus s.s., and its two columellar plications, reminescent of Latirus. However, as shown by McGinty (1955, p. 79, text fig. A), the radula is unlike either of those genera. Although Dolicholatirus has frequently been assigned as a subgenus of Latirus, the differences seem such that the resemblances are probably coincidental.

Bellardi (1884, p. 38) was the first person to realize that the group of extremely elongated (dolichos – Greek, an elongated bean; the kidney bean) shells, bearing only two labial plications, represented a genus or subgenus separate from the similar appearing Latirus (lathyros – Greek, a bean; Lathyrus is the modern name of the sweet-pea). He included two species: Latirus (Dolicholatirus) apenninicus Bellardi and one which he cited as "Turbinella" bromni Michelotti. Of the latter he stated that Michelotti had published a "buonissima" figure (1847, pl. 10, fig. 15), however, there was no accompanying description. This is correct, Michelotti only listed the name in a table (1847, p. 398) with a footnote to the effect that this new species had been discovered too late to be included in the text. What is not correct is that Michelotti did not call it Turbinella but Fusus. This error was repeated by Cossmann (1901, p. 23) when he selected this species as type of the genus, which he considered as closer to "Fusus" (i.e., Fusinus), placing it in the "Fusinace," than to "Lathy­rus," which he placed in the Fasciolariini. In terms of radular type the group is apparently not related to either of these, the radula being totally different. On radular bases alone it would seem closer to the Vasidae than anything in the Fasciolariidae. The geologic history of the line, wherein the morphotype has existed virtually without change since the Eocene, suggests that it is a completely distinct group and probably should have its own family.

Genus DOLICHOLATIRUS Bellardi, 1884

Type species, by subsequent designation, Cossmann, 1901: "Turbinella" bromni Michelotti [= Fusus bromni Michelotti, 1847].

Type species, by original designation: Fusus funiculosus Lamarck.

Dolicholathyrus (emendation) COSSMANN, 1901, Essais Paléonconch. Comp., pt. 4, p. 22.

Type species, by original designation: Fusilatirus pauli McGinty.

DOLICHOLATIRUS EXILIS (Gabb)

Text figures 1, 2

*Latirus exilis* Gabb. MAURY, 1917, Bulls. Amer. Paleont. v. 5, no. 29, p. 83(247), pl. 14(40), fig. 4.


**Diagnosis:** “Small, elongate, slender, spire longer than the aperture and canal; whorls numerous, suture bordered by a rib; surface marked by a very few large longitudinal ribs, five or six to a volute. These are crossed by strong revolving lines, of which about three appear on the upper whorls. Mouth small, oval, extended into a long slender, slightly curved canal: inner lip encrusted, the plate extending so as to make a raised sharp border to the mouth; internally marked by two strong transverse folds. Length 1.5 inch.” (Gabb, 1873)

Dimensions of holotype: height 31.6 mm, diameter 9.5 mm.

Holotype: ANSP 2948.

Type locality: Dominican Republic; Rio Gurabo near Los Quemados (= TU 1210), here designated.

**Occurrence:** Chipola Formation, lower Miocene; Florida. Cercado and Gurabo formations, (?) upper Miocene; Dominican Republic.

**Figured specimens:** Text figure 1, USNM 647712; height 20.3 mm, diameter 5.5 mm; TU 830. Text figure 2, USNM 248193; height 22.0 mm, diameter 7.3 mm; TU 1210. Other occurrences: TU locality numbers 1048, 1230.

**Discussion:** This small species is never common; in the Tulane Collections it is represented by four specimens, one from each of the four localities cited above. As was his usual practice, Gabb gave no data for his species, but both the Maury Collection (1917, p. 83) and ours made at the same spot, downstream from where the road crosses the Rio Gurabo west of Los Quemados (now a bridge, but a ford for Maury and Gabb), contain specimens and it is probable that this is also where Gabb made his collection. Therefore, TU 1210 is here designated as the type locality. This outcrop is in the Gurabo Formation, but the species also occurs in the Cercado Formation (TU 1230), which may be only a shallow-water facies of the deeper Gurabo Formation.

The Cercado and Gurabo formations were originally described as being of Aquitanian and Burdigalian ages, respectively. Subsequent work (of which there has been very little) suggests that the beds are younger. Seiglie and Cucurullo (1971) have dated the Mao Adentro Limestone and the Mao Clay as Zones N 18 and N 19 (lower Pliocene) and, as the Gurabo grades into the Mao Adentro, it seems probable that the latter is approximately N 17, or uppermost Miocene. Neither the Gurabo nor the Cercado have
yielded any definitive guide fossils, but according to W. H. Akers (personal communication) the beds at TU 1210 are between Zones N 17 and 19. The presence of a Dominican species in the Chipola Formation offers little assistance in an age determination, for, as noted above, the *Dolicholatirus* shell form is so conservative that there is little change from the Eocene to the Recent forms, and individual species would be expected to be long-lived. The Recent *D. pauli* is also very much like *D. exilis* and may prove to be the same species. While it is unusual to find a lower Miocene species still living, it is not unheard of—in the Chipola there are approximately a dozen mollusks that still are found in the Recent fauna.

ACKNOWLEDGEMENTS

The writer would like to express her appreciation to Robert C. Hoerle, West Palm Beach, Florida, who collected the specimen figured from the Chipola Formation; to Thomas R. Waller, U.S. National Museum, and Earl A. Shapiro, Philadelphia Academy of Natural Sciences, for the loan of type specimens; and, especially, Robert C. Bullock, Dept. of Zoology, University of Rhode Island, for his assistance with the genus *Dolicholatirus*.

LOCALITY DATA

The following are Tulane University fossil locality numbers.

830. Chipola Fm., Ten Mile Creek, at power line crossing about one mile west of Chipola River (SE ¼ Sec. 12, T1N, R10W), Calhoun Co., Florida.

1048. Chipola Fm., Farley Creek, south bank, about 0.6 mile east of bridge on Florida High-

way 275 (NE ¼ Sec. 21, T1N, R9W), Calhoun Co., Florida.

1210. Gurabo Fm., Rio Gurabo, east bank, first bluff below the bridge on the road from Los Quemados to Sabaneta, Dominican Republic (= USGS 8544; Maury’s Zone B).

1230. Cercado Fm., east bank of the Rio Caua at Caimito, just above bridge on road from Los Quemados to Sabaneta, Dominican Republic (Maury’s Zone H).

LITERATURE CITED


November 16, 1977