NOTES ON THE FAUNA OF THE CHIPOLA FORMATION — XXIII
ON THE OCCURRENCE OF THE GENUS *BASTEROTIA* (MOLLUSCA:BIVALVIA)

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The genus *Basterotia* Mayer *in* Hörnes, 1859, type species *B. corbuloides* Mayer *in* Hörnes, described from the Tortonian (late middle Miocene) of the Vienna Basin, is represented in the fauna of the Burdigalian (late lower Miocene) Chipola Formation of western Florida by two species, one referable to *Basterotia* sensu stricto, the other to the subgenus *Basterotella* Olsson and Harbison, 1953; each represents the oldest presently known occurrence of the respective subgenus in the western Hemisphere. The form described by Aldrich as "*Basterotia ? prima*" from the lower Eocene Wilcox Formation of Alabama is not a member of this genus (see below).

Technically, the name *Harlea* Gray, 1842, is an older generic name for the species presently referred to *Basterotia*, but that name has never been used since the time of its original proposal and must be considered a *nomen oblitum*. Gray's original description (1842, p. 78), ". . . oblong, subquadrate, thin shells, with a sharp keel from the umbo, and conical hinge teeth," is strongly suggestive of the specimens presently referred to *Basterotia*. No species were mentioned in the original description of the genus, which was assigned to the family Corbulidae (p. 91). In 1847, however, Gray (p. 192, no. 640) listed as type "*Corbula* n. s." Subsequently, in 1890 (p. 303), E. A. Smith repeated Gray's 1842 description and then noted: "This diagnosis applies perfectly to the type *marked by Gray himself** as *Harlea*, and this was described the year following by Hinds as *Corbula quadrata*." In the opinion of the writer this statement has the effect, under Article 69 (a) (ii) of the *International Code of Zoological Nomenclature*, of making Hinds' species the type, by subsequent designation, of *Harlea*, and at the same time, making that genus the senior synonym of *Basterotia*.

Smith went on to add: "Considering the imperfection of Gray's description, and the fact of his not citing any species, I think it would be advisable to ignore his genus *Harlea, although personally I am sure what group he intended to include under that name.*"* Accordingly, he used *Basterotia* for his new species *B. oblonga* [which is almost certainly to be referred to the subgenus *Basterotella*] from the Recent fauna of the Island of St. Helena. Subsequently Lamy (1925, p. 503) noted Smith's observations, but also used the name *Basterotia*. In 1947, Hertlein and Strong (p. 137) cited *Harlea* as the senior synonym of *Basterotia* with the notation "[no species cited]. See E. A. Smith . . ." and then, without further comment used the name *Basterotia*.

Thus, although technically the senior and now valid generic name for those species that have been referred to *Basterotia* since 1859, *Harlea* proves never to have been used in a taxonomic sense since its original proposal in 1842; accordingly it must be considered to be a *nomen oblitum*. The International Commission on Zoological Nomenclature has been requested to suppress the name *Harlea* for purposes of the Law of Priority, but not for those of the Law of Homonymy, and to place that name on the *Official Index of Rejected and Invalid Generic Names in Zoology*, and at the same time, to place the name *Basterotia* on the *Official List of Generic Names*, thus conserving the nomenclatorial usage of some 120 years.

Both *Basterotia* s.s. and *Basterotella* are represented in the Recent faunas of the western Atlantic region; the former by *B. quadrata* Hinds (1843, p. 57) and (?) *B. pustula* Nowell-Usticke (1971, p. 29, fig. 1618)†,

*Italics by the present writer.

† The systematic position of this small species is uncertain. The published illustration is not adequate to permit determination as to whether it is to be referred to *Basterotia s.s.* or to *Basterotella*. Furthermore the description does not match the figures in that it is said to be "sharply pointed anteriorly instead of being rounded", while the illustration shows a rounded anterior end and a pointed postero-ventral margin resulting from the post-umbonal carination.

the latter by *B. (Basterotella) elliptica* (Recluz) (1850, p. 168) and *B. corbuloidea* (Dall) (1899, p. 885, pl. 88, fig. 2). *Basterotella* is also present in the lowermost Pleistocene Bowden Formation of Jamaica — *B. bowdeniana* (Dall) (1900, p. 1133) — and in the upper Pliocene Caloosahatchee Formation of Florida — *B. floridana* (Dall) (1903, pl. 57, fig. 10).

Basterotia quadrata and its variety or synonym *granatina* (Dall) (1881, p. 109 — as *"Poromya?"*) is present from the coast of South Carolina southward to the State of Alagoas, Brazil (Rios, 1975, p. 220), including Bermuda, the West Indies and the Gulf of Mexico from Texas to Yucatan. It has also been reported from Senegal (Nicklès, 1950, p. 187, text fig. 349 — as *"Anisodonta (Basterotia) quadrata* (Hinds)").

Originally *Basterotia quadrata* was referred to the genus *Corbula*, being described by Hinds from specimens in the Metcalf collection that were without locality data, with the result that there was for some time considerable uncertainty as to the true locus of the species. Hinds for some years had been describing species from the Belcher and Cuming collections that were primarily from Pacific sites. In the paper in which *"Corbula" quadrata* was named there were 21 other species described as *"Corbula;"* all represented in the Belcher and Cuming collections. Nineteen of these twenty-one were cited from eastern and western Pacific Ocean sites, mainly the Panamic and Philippine provinces; one species from the Cuming collection was without locality information, and one, cited as "Cab. Cuming et Metcalf" was from Senegal. In the same paper two new species of *Potamomya* were described; one from the Metcalf collection was cited as "Hab. Brazil . . ." *"Corbula" quadrata* was the only species of *Corbula* cited as being known only from the Metcalf collection. Evidently all three species from that collection came from Atlantic basin localities.

Despite the fact that Recluz (1850, p. 168) had reported Hind's species from Guadeloupe and Hanley (1856, p. 345, pl. 12, fig. 36) had figured the type specimen and cited the locality as the West Indies, Woodring (1925, p. 191), following Dall, referred to *quadrata* as a "Pacific species" as did Durham (1950, p. 95); Olsson and Harbison (1953, p. 97) said that it is from the "Panama-Pacific region." Later, however, Olsson (1961, p. 242) stated that "this species has been cited as a Pacific shell by Dall but without mention of locality station. . . . The occurrence of this species in the eastern Pacific . . . remains unverified." The Pacific species, according to Keen (1971, p. 145) is *Basterotia (Basterotia) peninsularis* (Jordan) (1936, p. 147, pl. 18, figs. 11, 12 — as *"Anisodonta"*), originally described from the Pleistocene of Baja California, and found living from eastern Oaxaca, Mexico, to the Galápagos Islands.

It is difficult to arrive at any conclusions as to the paleoecologic significance of the occurrence of *Basterotia* and *Basterotella* in the Chipola fauna. The data on the Recent western Atlantic species seem suspect, for in every case where authors cite the nature of the material and the depth from which it was obtained, the latter information proves to be based upon single valves. The extreme depth range for *B. quadrata* of 6 to 640 fathoms cited by Dall (1889, p. 70), and following him by Johnson (1934, p. 57) and Abbott (1974, p. 476), who lists 5 to 640 fathoms, proves to be based, in the case of the deeper record, on a single valve (see Dall, 1886, p. 316). This may well have been transported in the intestines of a mollusc-eating fish, or by some other means from waters of much shallower depth. Most authors tend to cite more shallow depths; the 5 fathoms indicated by Abbott *(sup. cit.)* apparently is based upon his 1958 (p. 137) record of "a single left valve . . . dredged in 30 feet of water near the Main Channel, North Sound, Grand Cayman" Island. Rios (1976, p. 220) lists the species from two dredging stations off the northeast coast of Brazil, at 20 to 50 meters, sandy bottoms, but does not indicate whether or not the records are based upon living material. Odé (1973, p. 79) lists *B. quadrata granatina* from one locality off the Texas coast at 40 fathoms, sand and mud bottom, but again with no indication as to the nature of the material.

A similar situation exists with respect to the eastern Pacific *B. peninsularis* (Jordan); Hertlein and Strong (1947, p. 137) note: "one fairly large valve . . . was found in the beach drift at Corinto, Nicaragua. Another very small valve . . . was dredged in 7 fathoms at Port Guatulco, Mexico." Keen (1971, p. 145) states: "Living, Port Guatulco, Mexico, to Galápagos Islands, intertidally and to depths of 13 meters." The Port Guatulco locality, and 13 meters depth undoubtedly are based upon the Hertlein

and Strong material, the "intertidally" may refer to the Galápagos occurrences. In this connection it is of interest to note that Keen, in her discussion of *Basterotia (Basterotella) hertleini* Durham says that the species occurs "intertidally, nestling in crevices and offshore to 46 m, . . ."

The writer suggests that the phrase "nestling in crevices" may be an answer to the problem of the scarcity of records of living individuals of both *Basterotia* and *Basterotella*. Only those specimens that had been washed out or had been removed from the crevices by predators would be found by dredging, and, with the relatively small ligamental area the valves would be rather easily separated during their removal. It is also significant that none of the 76 valves of the two Chipola species here described were found in association with its opposite. The Chipola occurrences are shown in Table 1.

Potamides suprasulcatus (Gabb) and *Terebralia dentilabris* (Gabb) (see Hoerle, 1972, p. 17, pl. 1, figs. 7, 8 and p. 20, pl. 1, figs. 9-11, respectively), plus many blocks and boulders composed of much-bored fragments of coral and of calcareous sandstone. The type specimen of *Concholepas drezi* E. H. Vokes (1972, p. 32, text fig. 1a-c) is from this locality, which was certainly in relatively shallow water not too distant from the mouth of a fresh-water stream.

Locality TU 555, near the top of the exposed section on the Chipola River has the largest representation of the present species, 27 valves, and again has abundant colonial coral specimens, all much bored by species of bivalves. Associated are a new species of *Turbo*, *Potamides suprasulcatus*, *Terebralia dentilabris*, the second and only other known specimen of *Concholepas drezi*, together with numerous examples of *Smaragdia chipolana* (Dall) (1892, p. 422, pl.

Table 1

Tulane Univ. localities	*Basterotia (Basterotella) ambona*		*Basterotia (Basterotella) miocenica*	
	right valves	left valves	right valves	left valves
459	1	0	2	3
546	1	0	1	2
547	0	0	1	1
555	6	11	1	9
818	1	1	0	0
819	1	1	0	0
824	0	1	0	0
830	1	1	3	5
950	0	0	1	0
1021	0	0	0	1
1048	6	3	4	0
1196	6	6	1	4
	23	24	14	25

In accord with the suggestion that these forms may have a nestling habit is the fact that all of those localities from which more than three or four valves were secured show features that indicate close proximity to shallow-water or coral reef environments. The extreme, perhaps, is TU 459, where two species of *Donax* constitute the most abundant element of the fauna. Associated are six valves representative of the two species here described plus numerous specimens of the fresh-water gastropod genus *Planorbis*, a number of large valves of *Ostrea haitensis* Sowerby, specimens of

23, fig. 19 — as "*Neritina*"). The modern representatives of *Smaragdia* are abundant on turtle grass from low tide to about 10 fathoms.

Locality TU 830, at the base of the Chipola Formation on Tenmile Creek has ten valves of the *Basterotia* species. At this site the fossils occur adjacent to an irregular, eroded and channeled contact with the underlying lower Miocene Chattahootchee Formation, a tan, usually sandy, dolomitic limestone, boulders of which, together with some heads of coral, occur at the immediate contact.

At TU 1196, on Farley Creek from which we have eleven valves, it appears that we are again near the base of the formation, but the actual contact has not been observed. There are, however, numerous rather large, much-bored blocks of calcareous material obviously derived from the Chattahootchee Formation, numerous heads and fragments of coral, some having rounded pebbles of a milky quartzite up to about one inch in diameter incorporated within them. Here also we find specimens of the new species of *Turbo,* together with *Smaragdia chipolana* and large valves of *Ostrea haitensis.*

Family SPORTELLIDAE Dall, 1899
[+ BASTEROTIIDAE Cossmann, 1909]

Genus BASTEROTIA Mayer *in* Hörnes, 1859

Harlea GRAY, 1842, Synop. Contents Brit. Mus., ed. 44, p. 78 (genus without species). Type species: *Corbula quadrata* Hinds, 1843, by subsequent designation [ICZN Art. 69(a) (ii)], Smith, 1890, see discussion above.

Eucharis RECLUZ, 1850, Journ. de Conchyl., v. 1, p. 167. Type species: *Corbula quadrata* Hinds, 1843, by original designation [non *Eucharis* Latreille, 1804 (Hymenoptera), etc.].

Basterotia MAYER *in* HÖRNES, 1859, Verhandl. k. k. Zool.-Bot. Gesell. Wien, v. 9, p. 71. Type species: *Basterotia corbuloides* Mayer *in* Hörnes*, by monotypy.

Basterotia s.s. includes moderately small subquadrate species of corbuliform aspect, with however, a sharply angled, usually carinate, posterior ridge extending from immediately behind the prosogyrate umbo to the postero-ventral margin. The surface is marked by fine concentric growth lines that may become coarsened and somewhat laminate toward the ventral margin, and by fine to coarse granulations. On the species here described, and to a lesser extent on those specimens of *B. quadrata* (Hinds) available for study, these granulations are most strongly developed on the more anterior portion of the right valves, tending to weaken posteriorly, becoming almost, or entirely absent adjacent to the posterior umbonal ridge, but being relatively strong again on the posterior slope. The ligament is external, situated on a rather strong, inflated, almost tooth-like nymph. The hinge is marked by one relatively large and more or less hook-shaped cardinal tooth in each valve; that of the right valve separated from the nymph by a narrow gap, with a well-developed cardinal socket immediately anterior to it, while that of the left valve is anterior to the socket and is supported anteriorly by a somewhat projecting margin of the valve itself. The pallial line is entire.

Superficially corbuloid in size and general shape, species referable to *Basterotia* may be distinguished by their external ligament mounted on a strong inflated nymph, by the absence of a chondrophore on the hinge plate and by the fact that the cardinal teeth are reversed in position from those in the Corbulidae with that of the right valve posterior to the socket and that of the left anterior to it.

Insofar as can be determined the following is the first species referable to *Basterotia* sensu stricto to be described from the western Atlantic Tertiary faunas. As noted above, *Basterotia ? prima* Aldrich (1921, p. 20, pl. 3, figs. 1-3) from the Wilcox, lower Eocene of Alabama, is not a member of this genus; the large anterior ventral gape, median umbo-ventral depression, the raised border of the anterior adductor that is "buttresses to the hinge plate," as well as the details of the hinge including, apparently, the absence of a cardinal tooth in the left valve are all characters that distinguish it from *Basterotia.* Dall's (1900, p. 1133) *Anisodonta (Basterotia) bowdeniana* from the basal Pleistocene Bowden beds of Jamaica, which was referred to *Basterotia* s.s. by Woodring (1925, p. 101, pl. 26, figs. 9, 10) is a member of the subgenus *Basterotella.*

BASTEROTIA (BASTEROTIA) AMBONA
H. E. Vokes, n. sp.
Text figures 1-3

Diagnosis: Shell relatively small, subquadrate corbuliform, inflated, with a strongly carinated angulation extending from immediately behind the prosogyrate umbo to the postero-ventral margin, the angulation being stronger, more carinated and pronounced during the younger

*It should be noted that although most modern authors, including Chavan in the *Treatise on Invertebrate Paleontology* (p. N540), cite the author of this species as "Hörnes," Hörnes himself, and a number of subsequent authors, including Fischer (1887, p. 1076), Dall (1886, p. 306; 1900, p. 1132), Lamy (1925, p. 503), etc., attribute it to Mayer.

stages of shell growth (see pl. 1, fig. 3), generally weakening and losing its pronounced carination in the ventral, adult stages. Umbo situated approximately at the anterior third of the total shell length; anterior end rounded and passing gently into the relatively straight ventral margin; posterior margin straight to slightly arcuate, subangulate to sharply rounded at the postero-ventral corner, the degree of angulation reflecting the relative strength of the ventral portion of the umbonal ridge. Surface marked by concentric growth rugae of varying strength, occasionally being sufficiently raised to resemble rounded concentric ribs; superimposed upon these, especially in the right valve, strong, pustulose granulations most numerous on the anterior half of the valve, becoming weak, almost absent, immediately in front of the posterior umbonal angulation, and then being again well-developed on the posterior end. Hinge typical of the genus; inner valve margins smooth, except, in some specimens, the posterior portion of the dorsal margin finely denticulated, apparently by marginal pustulations similar to those on the outer surface; pallial line entire, adductor scars not prominent, the anterior extended dorsally into the umbonal portion of the valve behind the hinge area.

Holotype, USNM 298649; length 11.6 mm, height 9.5 mm, diameter (right valve) 3.3 mm; locality TU 555.

Paratype, USNM 298650; length 10.5 mm, height 9.4 mm, diameter (left valve) 3.3 mm; locality TU 1196.

Paratype, USNM 298651; length 6.4 mm, height 5.7 mm, diameter (right valve) 1.7 mm; locality TU 1196.

Remarks: Basterotia ambona differs from *B. corbuloides*, the type species of the genus — insofar as can be determined from the description and illustrations given by Hörnes (1859, p. 40, pl. 3, figs. 11a-g), no specimens being available for comparison — in being somewhat smaller, proportionately shorter as compared to the height, less strongly inflated and in lacking the median depression in front of the carinate posterior umbonal ridge that results in a shallow concavity in the ventral margin of the Vienna Basin species. The Recent *B. quadrata* and *granatina* are smaller than *B. ambona*, less strongly pustulated, and have a more arched postero-dorsal margin with the umbo relatively more anterior in position, approximately at the anterior quarter of the valve length. The specific name is from the Greek "ambon" meaning a ridge or crest.

The Tulane University collections from the Chipola Formation contain 47 valves (23 right and 24 left) of this new species (see Table 1).

Subgenus BASTEROTELLA Olsson & Harbison, 1953

Basterotella OLSSON and HARBISON, 1953, Acad. Nat. Sci. Phila., Mon. 8, p. 97. Type species: *Pleurodesma floridana* Dall, 1903, by original designation.

The subgeneric name *Basterotella* was proposed for forms "with the nymphal ridge shorter and bearing a small resilial scar on its lower or inner side," (Olsson, 1961, p. 243). They also have a rounded or angled, but non-carinate, posterior umbonal ridge. The type species, as figured by Olsson and Harbison (1953, pl. 9, fig. 1a), shows well-developed surficial granulation on the right valve, and Olsson, in the original description of the subgenus states that it is "Like *Basterotia* in . . . surface granulation . . .". Most species, however seem to have this granulation but weakly developed, and in some it appears to be absent. Nevertheless, Olsson (1961, p. 243) and Abbott (1974, p. 476) err when they state that species referable to *Basterotella* lack surface granulation.

BASTEROTIA (BASTEROTELLA) MIOCENICA H. E. Vokes, n. sp. Text figures 4-6

Diagnosis: Shell relatively small, elongate-quadrate in shape, inequilateral with umbo approximately at the anterior fourth of the total length; the short anterior end broadly and regularly rounded, the more elongate posterior with almost parallel dorsal and ventral margins and rounded end; valves moderately well inflated with a rounded to subangulate, non-carinated posterior umbonal ridge, ornament of concentric growth increments of varying strength, forming a somewhat irregularly concentric pattern, and of microscopic surficial granulations stronger on the right valves where they usually extend to about mid-length of the valve; in left valves, where present, occurring only on the anterior fourth of the length. Hinge essentially that of the genus *Basterotia* with an exceedingly small resilial scar; inner valve margins smooth, that of the dorsal side tending to be broadly and regularly arched from the nymph all the way to the posterior end in contrast to the parallelism when viewed externally. Anterior adductor scar elongate ovate, a little impressed and with a low rounded ridge adjacent to its posterior side; posterior scar almost twice as large as the anterior, rounded and not impressed.

Holotype, USNM 298652; length 11.4 mm, height 7.9 mm, diameter (right valve) 3.2 mm; locality TU 555.

Paratype, USNM 298654; length 10.8 mm, height 7.6 mm, diameter (left valve) 3.0 mm; locality TU 1196.

Paratype, USNM 298653; length (slightly incomplete) 10.2 mm, height 7.9 mm, diameter (left valve) 2.5 mm (a variant with inflated umbonal region giving a rounded outline); locality TU 1196.

Remarks: Basterotia (Basterotella) miocenia differs from *B. (B.) bowdeniana* (Dall), the type and only known specimen of which, a right valve with broken ventral margin, was figured by Woodring (1925, p. 191, pl. 26, figs. 9, 10 — as *Basterotia* s.s.), in having a somewhat broader, less acute umbo, apparently in response to a more sharply angulate posterior-ventral ridge in the Bowden species. The anterior end of the Chipola form is broadly and regularly rounded, lacking the antero-dorsal angulation shown in the Woodring illustrations. Dall's measurements, "length 10.5 the diameter about 5 millimeters" suggest that the Bowden shell is proportionately more inflated. The Recent *B. (B.) elliptica* (Recluz) is essentially similar in shape, but is smaller. Abbott (1974, p. 476) gives the length as 5 to 9 mm; the largest of the three specimens in the Tulane University collection from the northern coast of the Yucatan Peninsula has a length of 5.4 mm and a height of 3.3 mm. These have the umbo somewhat more anterior in position, and are less inflated with a somewhat lower, more rounded postero-ventral "ridge". Whether or not these features are a reflection of the small size of the possibly immature specimens cannot be determined without additional material. It is of interest that all of these small shells show microscopic granulations on the valve surface, over all of the anterior half in the right valve, but on the anterior fourth only, in the left valves.

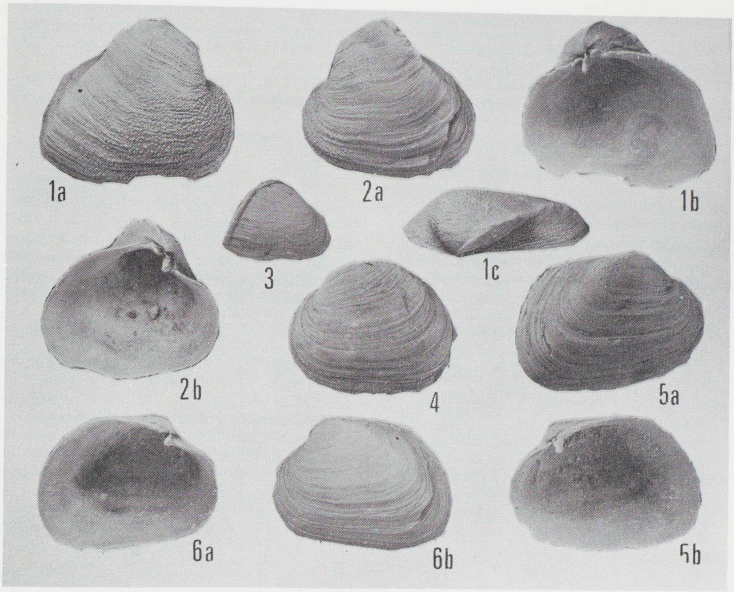
Anisodonta corbuloidea Dall (1899, p. 885, pl. 88, fig. 2), which Abbott (1974, p. 476) referred to *Basterotia (Basterotia)*, appears to be more correctly referred to *Basterotella*. Judging from Dall's figure of the interior of the valve the shell is more elongate and rectangular in outline than *B. (B.) miocenica*, and has a considerably lower umbo; it also is a smaller form, Dall gives the length as 6.5 mm, and also notes that the surface is "*microscopically sagrinate.*" Although the specific name *corbuloidea* is similar to that of *Basterotia corbuloides* the type species of the genus, it is not to be considered as a homonyn of the latter. The termination *-oides* (= "like") makes the type species name a noun of the feminine gender, while *-oidea* as used by Dall, is an adjective in the feminine gender. The International Code of Zoological Nomenclature, Article 57(b) (i) clearly limits to adjectival forms the disregarding of differences in termination due solely to gender.

The Tulane University collections contain 39 valves (14 right, 25 left) of *B. (B.) miocenica* from nine Chipola localities (see Table 1).

LOCALITY DATA

The following Tulane University fossil localities in the Chipola Formation, Calhoun County, Florida, have yielded specimens referable to the genus *Basterotia:*

459. Chipola River, east bank about 1500 feet upstream from the mouth of Taylor Lake Branch (NW¼ Sec. 29, T1N, R10W).
546. Tenmile Creek, north bank about 1.75 miles west-northwest of mouth of the creek at Bailey's Ferry (SW¼NE¼ Sec. 12, T1N, R10W).
547. Chipola River, west bank about 2000 feet upstream from mouth of Fourmile Creek (SW¼ Sec. 29, T1N, R9W).
555. Chipola River, east bank about 1000 feet above mouth of Fourmile Creek (SW¼ Sec. 29, T1N, R9W).
818. Farley Creek, south bank 0.1 mile west of bridge at Florida Highway 275 (SW¼ Sec. 21, T1N, R9W).
819. Farley Creek, south bank 0.2 mile west of bridge at Florida Highway 275 (SW¼ Sec. 21, T1N, R9W).
820. Farley Creek, immediately upstream from bridge at Florida Highway 275 (SW¼ Sec. 21, T1N, R9W).
824. Farley Creek, north bank about 0.5 mile east of bridge at Florida Highway 275 (SE¼ Sec. 21, T1N, R9W).
830. Tenmile Creek, north bank at power line crossing, about 1.3 miles west-northwest of mouth of creek at Bailey's Ferry (SE¼SE¼ Sec. 12, T1N, R10W).
950. Chipola River, west bank, about 2000 feet above mouth of Farley Creek (NE¼SW¼ Sec. 20, T1N, R9W).
1021. Tenmile Creek, north bank at north end of first meander upstream from TU 546, about 0.45 mile east of bridge on Florida Highway 73 (SE¼NW¼ Sec. 12, T1N, R9W).
1048. Farley Creek, about 0.6 mile east of bridge on Florida Highway 275 (SW¼NE¼ Sec. 21, T1N, R9W).
1196. Farley Creek, north bank, about 0.65 mile east of bridge on Florida Highway 275 (SW¼NE¼ Sec. 21, T1N, R9W).



Text figures (all ×3)

1 - 3. *Basterotia (Basterotia) ambona* H. E. Vokes, n. sp.

1. Holotype, USNM 298649; length 11.6 mm, height 9.5 mm, diameter 3.3 mm. Locality TU 555.
2. Paratype, USNM 298650; length 10.5 mm, height 9.4 mm, diameter 3.3 mm. Locality TU 1196.
3. Paratype, USNM 298651; length 6.4 mm, height 5.7 mm, diameter 1.7 mm. Locality TU 1196.

4 - 6. *Basterotia (Basterotella) miocenica* H. E. Vokes, n. sp.

4. Paratype, USNM 298653; length 10.2 mm, height 7.9 mm, diameter 2.5 mm. Locality TU 1196. Variant with inflated postero-dorsal region resulting in rounded outline.
5. Paratype, USNM 298654; length 10.8 mm, height 7.6 mm, diameter 3.0 mm. Locality TU 1196.
6. Holotype, USNM 298652; length 11.4 mm, height 7.9 mm, diameter 3.2 mm. Locality TU 555.

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