

NOTES ON THE FAUNA OF THE CHIPOLA FORMATION — XV  
ON THE OCCURRENCE OF "RANELLA" POPPELACKI HORNES,  
A GASTROPOD OF UNCERTAIN AFFINITIES

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Although the affinities of the Chipola Formation with the European Miocene beds of the Aquitaine Basin have been noted previously (Vokes, 1965), the similarities of the fauna to that of the Vienna Basin are less obvious. There is a certain degree of likeness, as both have numerous tropical genera in common, with species of *Mitra*, *Cypraea*, *Cassis*, and such, that have an air of familiarity about them. But the differences in the fauna are more conspicuous and there are numerous genera that are totally lacking in the Chipola but present to a greater or lesser degree in the Vienna Basin. One of these would be *Tibia*, certainly a tropical genus, that occurs in the Vienna fauna but not in the Chipola. Even more noticeable are the Mediterranean elements such as *Ocenebra*, *Ocinebrina*, *Aporrhais*, *Argobuccinum*, etc., that have no equivalent in the Chipola fauna. Therefore, it is of special interest to discover a species, which occurs in both faunas, that is not only similar but probably identical.

The specimen here illustrated (text fig. 1) is the sole example known from the Chipola Formation (at TU 951) and, as a comparison with the Hörnes illustration also given (text fig. 2) will demonstrate, there seems to be no discernable difference between the Chipola shell and the one from the Vienna Basin. This small species (both are about 12 mm) was named *Ranella poppelacki* by Hörnes (1853, p. 215) and was said by him to be very rare at Steinabrunn.

The beds at Steinabrunn, which is about 50 miles north of Vienna, are almost certainly Tortonian in age, and the similarity of the species in the Chipola and at Steinabrunn are best attributable to facies. According to Hörnes (1856, map. p. 712) the locality is in the "Lethyakalk" facies, of which Gignoux (1955, p. 569) says: The Tortonian, well developed in the intra-Alpine Basin, is represented by two principal facies... The second is the facies of the

Leitha limestone (*Leithakalk*), developed around the Leitha Massif, which formed an island surrounded by rocky depths, and which is therefore an organic facies with *Lithothamnium*, bryozoans, large ornate pelecypods (spondyles, pectens) and reef echinoids." Obviously a marl much like that found in the Chipola, it is not surprising that *Typhis wenzelidesi*, the only other Vienna Basin species that has a very near Chipola equivalent in *Pterotyphis vokesae* Gertman, also comes from Steinabrunn.

The generic assignment of "*Ranella*" *poppelacki* is a genuine puzzle. Although described as *Ranella*, it obviously does not belong in this group for the differences between it and the members of the Bursidae (Ranellidae of authors) are immediately obvious. The two characters that they do have in common consist of the pronounced anal notch and a tendency toward two varices on opposite sides of the aperture. However, the bursids, or "Frog Shells," as the name implies are typified by a "warty" surface ornamentation; the varices are neatly aligned up the spire, and the siphonal canal is much shorter.

The species has also been referred to the genus *Eupleura* by Glibert (1952, p. 309) in a discussion of a French species that bears a slight similarity to our little enigma. The French species, "*Ranella*" *alata* Millet, differs from "*R.*" *poppelacki* in having a very slight anal sinus and in having a strongly cancellate surface ornamentation. However, neither is referable to *Eupleura*, a genus that is apparently confined to the New World, and is characterized by thickened rather than thin flange-like varices and a calcitic shell. No known species of *Eupleura* has an anal notch.

"*Ranella*" *alata* Millet, from the middle Miocene of the Aquitaine Basin, and another French species, "*Argobuccinum*" *boutillieri* Cossmann, from the Lutetian of the Paris

Basin, are much alike, both having a strongly cancellate surface ornamentation, two opposite varices, and only the slightest of anal notches. These two species have proved to be a problem to French workers equal to our "Ranella," in that the generic assignments for the two over the years have included: *Ranella*, *Triton*, *Colubraria*, *Argobuccinum*, *Eutritonium*, and *Eupleura*. This is virtually a catalogue of all genera with two varices. They obviously fit in none of these but just where they do fit has been a mystery.

The general tendency has been to place these two-variced species into either the Bursidae or the Cymatidae. The writer, for a time, also considered the possibility of the Muricidae. Although the vast majority of the Muricidae do have at least three varices, there is one genus of Typhinae (*Distichotyphis* Keen and Campbell, 1964) that has but two varices. The nature of the aperture in these "Ranella" species is much like that of the Muricinae, with a thick, wing-like varix and a completely separate lip formed in advance. Indeed, except for the irregularly placed varices there is a strong resemblance between "R." *poppelacki* and the species assigned to the subgenus *Pterynotus* (*Pterochelus*). However, there is one very critical difference between this enigmatic form and all of the members of *Pterynotus* and this is the nature of the early whorls. As the writer has noted previously (e.g., Vokes, 1968, p. 86), the members of the genera *Pterynotus* and *Poirieria*, two of the most ancient muricine lines, are marked by having on the first post-nuclear whorl six small flange-like varices. In *Poirieria* these simply continue to the adult stage, but in *Pterynotus* on about the second post-nuclear whorl every other varix is lost, or greatly weakened, and a shell with three varices and three intervarical nodes per whorl develops. In "R." *poppelacki* on the first post-nuclear whorl there are a dozen raised, cord-like ribs, equal in strength from suture to suture. They bear absolutely no resemblance to the early varices of *Pterynotus*. On the second post-nuclear whorl certain of the ribs form small open varices, but these are random in arrangement with from two to five intervarical nodes between each pair. This pattern continues up to the adult stage.

The search for a genus, or even family, for this species led to the Australian species originally described as *Daphnellopsis murex* Hedley, 1922.\* The type, a tiny 5 mm specimen, has a very marked resemblance to "R." *poppelacki*, differing only in that the Recent form has even fewer varices, just two on the body whorl, and one on the penultimate whorl, none prior to that. But this is clearly a juvenile specimen with only three post-nuclear whorls. At the same stage of development "R." *poppelacki* would have an almost identical appearance.

The Australian species *Daphnellopsis murex* is unquestionably congeneric with our Chipola shell. The only differences seen between the two forms are the stronger intervarical nodes of the older species, and a more rounded aperture. However, whether the two are referable to the genus *Daphnellopsis* seems very doubtful. *Daphnellopsis* was described in the *Siboga* Reports (Schepman, 1913) on the basis of five small specimens (all dead) of a new species taken at 247 meters in the Suva Sea, off the Lesser Sunda Islands, Indonesia. The type species, *Daphnellopsis lamellosa*, has strong cancellate ornamentation and possesses but a single terminal varix unlike the other species under discussion. The two specimens originally figured by Schepman (1913, pl. 30, fig. 10a, b, c) are about the same size, 9 mm (one lacks the protoconch and is smaller), and have four post-nuclear whorls, so it cannot be certain whether this is the adult stage or not.

Iredale (1918, p. 33) has rejected *Daphnellopsis* as a turrid, stating that "from the figure, Schepman's *Daphnellopsis* is a close relation to the groups Dall separates as *Macutotriton*, etc., the canal in this case being the one seen in the *Bursa* family, and not of turrid significance." But to this writer the illustration certainly shows an inbending of the axial ornamentation that is consistent with the Turridae, and the nature of the elongate aperture seems closer to the turrids than to either the Australian or the Chipola species. The appearance of only a terminal varix on *D. lamellosa*, as opposed to

\*The writer recently referred this species to *Pterochelus* (Vokes, 1971, *Bull. Amer. Paleont.*, v. 61, no. 168, p. 73). For reasons now obvious this was a mistake.

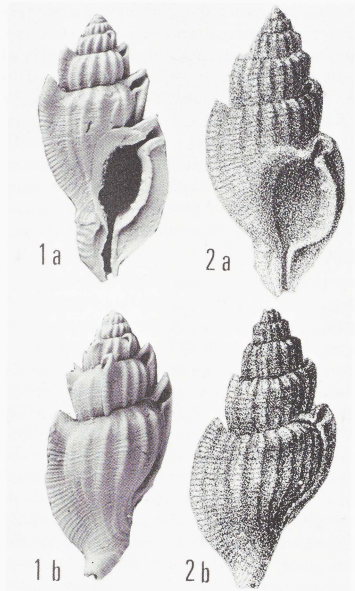
the repeated varices of the other forms, also suggests that the similarities are mere coincidence for the writer knows of no turrids that form multiple varices. Certainly the size of *D. lamellosa* is such that if multiple varices were going to appear they would already be present; the type of "*D.*" *murex* with one less whorl than *D. lamellosa* already shows three such varices.

Thus, it is probable that *Daphnellopsis* is indeed a turrid, as its rather deepwater habitat would corroborate, but the depth of the Australian form strongly contraindicates this placement, as it was taken in 5 to 8 fathoms, on the Great Barrier Reef (Murray Island). It seems certain that neither the Australian species nor the Chipola one are to be referred to the Turridae, for there is no suggestion of an inbending of the growth lines anterior to the suture, as would be the case in the Turridae.

Thus, instead of finding a genus in which to place "*Ranella*" *poppelacki*, all we have succeeded in doing is finding another species that should be placed in the same unknown genus. The two French species "*Ranella*" *alata* and "*Argobuccinum*" *boutillieri*, are only distantly related to "*R.*" *poppelacki* and "*D.*" *murex*, but seem more closely related to them than to any other group. It would seem probable that we have representatives of two genera of the same family, all of which are unnamed. With no more material than is presently available, the writer has no intention of erecting any new taxa but only wishes to call attention to the extreme similarity of these three isolated specimens, one from the Miocene of Germany, one from the Miocene of Florida and one from the Recent of Australia. Here is simply another unexplained item in the continuing problem of trans-oceanic distribution of tropical non-pelagic gastropods.

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Text figure 1. "*Ranella*" *poppelacki* Hörnes, USNM 647012; height 11.7 mm, diameter 5.8 mm; locality TU 951, Ten Mile Creek, Calhoun County, Florida. Text figure 2. "*Ranella*" *poppelacki* Hörnes, copy of Hörnes, 1856, pl. 21, figs. 12c, 12d; height (fide Hörnes) 13 mm, diameter 7 mm; locality, Steinabrunn, Austria. (All figures X 4)

Univalves: K.-K. Geol. Reichsanst. Abh., v. 3, p. 1-736, pls. 1-52, 1 map. [Issued in fascicules, no. 5, p. 209-264 in 1853, plates in 1856].

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