

# Comments on *Acantinella*, *Preangeria* and *Taurasia* (Muricidae, Drupinae)

C. Beets

Beets, C. Comments on *Acantinella*, *Preangeria* and *Taurasia* (Muricidae, Drupinae). — Scripta Geol., 74: 39 - 47, pl. 2, Leiden, December 1984.

A number of species of Drupinae, all quite unusual faunal elements, which up to now have been assigned to such genera as *Taurasia*, apparently confined to the South European Miocene, or *Preangeria*, *Acantinella* and *Acanthinucella* of the Southeast Asian Miocene are reconsidered. On the basis of their unique columellar features it is presently proposed to unite *Acantinella*, *Preangeria* and *Taurasia*, the last name taking priority.

Two new species are described: *Taurasia niasensis* and *T. pendopoensis*, from Indonesian Plio-Pleistocene and Miocene, respectively. A living Indo-Western Pacific species, called *Purpura buccinea* since 1844, is reclassified as presumably the only representative of *Taurasia* in the Recent fauna known to date.

If correctly reinterpreted, *Taurasia* would be one more example of genera travelling between southern Europe and the Far East in Miocene times, and still living in the latter region.

C. Beets, Backershagenlaan 18, 2243 AC Wassenaar, The Netherlands.

Introduction	39
Discussion of <i>Taurasia</i> , <i>Preangeria</i> and <i>Acantinella</i>	40
The Indo-Western Pacific species of <i>Taurasia</i>	41
(References	see p. 74)

## Introduction

The present notes deal with a number of apparently coherent, yet invariably uncommon elements of the molluscan faunas in Miocene to Quaternary formations of both southern Europe, here seemingly confined to Miocene, and southeastern Asia. There also appears to exist a single living species, likewise unusual, in the latter region.

The extinct species concerned had so far been assigned in Europe to *Taurasia* Bellardi, 1882, whether taken as a genus on its own or a subgenus of *Nassa* Roeding, 1798; and in Indonesia and the Philippines to *Preangeria* Martin, 1921, *Acantinella* Shuto, 1969

(initially to *Acanthina*) and *Nucella* (*Acanthinucella*). Every one of the Asian species was at first represented by no more than a single specimen, and two still are. Supplementary material from Borneo, Sumatra and Nias led the writer to review previous classifications. The evidence goes to suggest now, that all extinct Asian species — to which may well have to be joined one described as a *Tritonidea* (= *Pollia*) — and also a Recent species so far classified as a *Purpura* or *Cronia*, usually considered a subgenus of *Drupa*, together form a group of species which cannot, the author believes, be separated from *Taurasia*, whether collectively or singly.

The following Indo-Western Pacific species are considered in particular:

- Acantinella javana* (Martin) — Miocene, Java & Philippines (?)
- Nucella* (*Acanthinucella*) *sundaica* Oostingh — Miocene, Java
- Preangeria angsanana* Martin — Miocene, Java
- Preangeria talahabensis* Martin — Miocene, Java & Borneo
- Purpura buccinea* Deshayes — Recent, Solomons to Philippines
- Taurasia niasensis* spec. nov. — Plio-Pleistocene, Nias
- Taurasia pendopoensis* spec. nov. — Miocene, Sumatra

### Discussion of *Taurasia*, *Preangeria* and *Acantinella*

*Taurasia*, first described from the Miocene of the Turin Hills, Italy, and since also observed in France, likewise in Miocene deposits, has been linked up with *Nassa* (= *Jopas*) by Cossmann (1903b, p. 76) and Wenz (1938-1944, p. 1116). Its main distinctive feature is the possession of a curious set of columellar folds — while *Nassa* shows a single weak fold along its siphonal canal — which are very much like those in *Preangeria*, that is, one comparatively strong adapical fold (or two in the type species, *T. subfusiformis*) on the siphonal fasciole and a few abapical ones which are more oblique and weaker than the former. It should be noted that no basal labral tooth has been reported, *Taurasia* in this respect differing from some of the species attributed to *Preangeria* and *Acantinella* in Asia.

The European species referred to below, like the Far Eastern ones, form a group whose axial ornament varies quite considerably: there may be ribs, inflations, or even absence of such ornament:

- Taurasia coronata* Bellardi, 1882: Bellardi, 1882, p. 195, pl. 11, figs. 32-33; Cossmann, 1903b, p. 77; Sacco, 1904, p. 75; Cossmann & Peyrot, 1924, p. 545, pl. 14, figs. 53-54.
- T. nodosa* Bellardi, 1882: Bellardi, 1882, p. 195, pl. 11, fig. 34; Cossmann, 1903b, p. 77.
- T. pleurotoma* (Grateloup, 1832): Cossmann & Peyrot, 1924, p. 543, pl. 14, figs. 5-7; p. 545, pl. 16, fig. 25.
- T. sacyi* Cossmann & Peyrot, 1923: Cossmann & Peyrot, 1924, p. 547, pl. 13, figs. 31-32.
- T. subfusiformis* (d'Orbigny, 1852): Michelotti, 1847, p. 218, pl. 16, fig. 17 (*Purpura fusiformis*); Bellardi, 1882, p. 194, pl. 11, fig. 31; Cossmann, 1903b, pp. 76-77, pl. 5, figs. 8-9; Sacco, 1904, p. 75, pl. 17, figs. 20-23.

Perhaps also *Purpurella canaliculata* Bellardi, 1882, a species without columellar folds or only seemingly so: Bellardi, 1882, p. 193, pl. 11, fig. 35; Cossmann, 1903b, p. 77.

*Preangeria*, with the type species *P. angsanana* Martin, originally grouped with the Cancelariidae (see also Wenz, 1938-1944, p. 1356), was soon after reclassified as a member of the Purpuridae by Martin himself. As contended above, its columellar features are quite similar to those of *Taurasia* on the one hand, but not less so to the ones in *Acantinella*, a genus erected by Shuto with the type species *Acanthina javana* Martin, on the other.

The main, in fact the only difference between *Preangeria* and *Acantinella* would be that the latter possesses a basal labral tooth, as do the subgenera *Acanthina* Fischer von

Waldheim, 1807, and *Acanthinucella* Cooke, 1918, of *Nucella* Roeding, 1798, but unlike *Nucella* s. str. or *Neothias* Iredale, 1912; all of which, it should be noted, lack the set of columellar folds typical for *Preangeria* and *Acantinella*. However, there is the fact, so far undisclosed, that *Preangeria* too possesses a basal labral tooth; at least its type species and *P. talahabensis*, whereas both the new *Taurasia niasensis* and *T. pendopoensis* do not have one, and neither does the living *Purpura buccinea*. Yet, the author maintains that the latter three species, on the basis of their columellar features, cannot be separated from *Preangeria* and *Acantinella*, or *Taurasia*.

As to the seeming collective coherence of all species mentioned above, it all depends then whether one wishes to set much store by the presence or absence of a basal labral tooth. Obviously, this is largely a matter of taste and, following the lead given by several other malacologists, the writer is not prepared to do so, the columellar features, to his mind, being of paramount importance. The surprisingly *Oliva*-like columellar folds of the species discussed here are evidently quite unique amongst Drupinae and appear to set them apart as a natural close-knit tribe, which for reasons of priority should take the name of *Taurasia*.

Admittedly, *Taurasia* s.l. seems to lean over to a number of other Drupinae, possibly in particular *Pinaxia* H. & A. Adams, 1853, a subgenus of *Thais* Roeding, 1798, and also *Cronia* H. & A. Adams, 1853, a subgenus of *Drupa* Roeding, 1798, but always, it would seem, to a limited extent as none of these and other Drupinae show truly similar columellar features at all.

To the number of species of *Taurasia* mentioned so far should be annexed Oostingh's *Nucella (Acanthinucella) sundaca* from the Miocene of Java, a species resembling particularly *Preangeria talahabensis*; and perhaps *Tritonidea praeundosa* Vredenburg should also be joined to *Taurasia*. This species from the Miocene of Burma, shows overall similarity to both *P. talahabensis* and particularly, *Taurasia pendopoensis*, but its columellar and labral features remain to be checked before it can be classified unequivocally.

Finally, a careful scrutiny of the living Drupinae revealed, not surprisingly, that *Taurasia* also occurs in the Recent fauna, as evinced by the characteristics of *Purpura buccinea* Deshayes, the new *T. niasensis* looking much like it.

*Taurasia*, if correctly reinterpreted, would be one of several cases of genera migrating between southern Europe and the Far East in Miocene times and still being represented in the Recent Indo-Western Pacific fauna.

## The Indo-Western Pacific species of *Taurasia*

### *Taurasia angsanana* (Martin, 1921)

*Holotype* — RGM 9753; length 28.5 mm.

*Reference* — *Preangeria angsanana*, Martin, 1921-1922, pp. 450, 492, pl. 1, figs. 17-17a; Martin, 1928a, p. 124.

*Occurrence* — Preangerian: Njalindung Beds, Java.

*Comments* — The columella of the type specimen bears a seemingly weak, but evidently partly corroded, somewhat oblique adapical fold on the siphonal fasciole; and three more

oblique abapical folds, the basal one situated along the siphonal canal. The outer lip is damaged but the growth lines, by their forming a pointed protrusion in the deep groove adapically along the siphonal fasciole, reveal that a well developed labral tooth was present shaped precisely as for instance in *T. talahabensis*.

*Taurasia buccinea* (Deshayes, in Lamarck, 1844)

*Material* — Two fine specimens, 39.7 and 42.7 mm long; from Luban, Philippines, in the Rijksmuseum van Natuurlijke Historie, Leiden (coll. Mulder).

*References* — *Purpura buccinea*, Deshayes, in Lamarck, 1844, p. 92; Reeve, 1843-1878, 3 (1844), *Purpura*, pl. 4, fig. 16; Tryon, 1879-1897, 2 (1880), p. 179 (subgenus *Cronia*), pl. 55, fig. 176; Cernohorsky, 1978, p. 68, pl. 19, fig. 5.

*Occurrences* — Recent: from the Solomons to the Philippines, intertidal.

*Comments* — Both well preserved specimens examined bear a rather strong adapical columellar fold (its frontal prolongation weaker and curved towards the base) on the siphonal fasciole; and five abapical ones: four weaker, the basal one along the siphonal canal and stronger again. Their arrangement is exactly as in *T. niasensis* and not at all like *Cronia*. No basal labral tooth is present (or indicated by the growth lines), the outer lip being quite similar to the one of *T. niasensis*.

*Taurasia javana* (Martin, 1899)

*Holotype* — RGM 9755; length 30.5 mm.

*References* — *Acanthina javana*, Martin, 1891-1922, p. 137, pl. 21, figs. 315, 315a-b; *Acantinella javana*, Shuto, 1969, p. 110, text-fig. 25. *Acantinella* (non?) *javana*, Shuto, 1969, p. 111, pl. 11, fig. 3.

*Occurrences* — Preangerian: Selatjau (= Parungponteng), Java. Odengian: Upper Dingle Formation, Panay, Philippines.

*Comments* — Martin's type specimen belongs to the 'smooth' forms of *Taurasia*, its columellar folds being more oblique than for instance in *T. angasanana* and *T. talahabensis*, but just as in the new *T. pendopoensis*. The stronger adapical fold situated on the siphonal fasciole but more inside the aperture than in other species, while there are first four abapical folds, the basal one merely thread-like, and a stronger fifth one along the siphonal canal. The labral tooth is conspicuous, the corresponding growth lines in the groove along the siphonal fasciole exactly as in *T. angasanana* and *T. talahabensis*.

The basal portion of Shuto's specimen from Panay appears to be less constricted than its counterpart in the type, and the shape of its whorls and aperture different too, so that this shell seems to be more like *T. pendopoensis*, which however does not have a basal labral tooth.

*Taurasia niasensis* spec. nov.

Pl. 2, figs. 1-3.

*Holotype* — RGM 315 256: Pl. 2, figs. 1-3; length 33.4 mm; loc. 64, coll. Schroeder, Nias.

*Paratypes* — RGM 315 257; length 23 mm; loc. 42, coll. Schroeder, Nias. RGM 315 258; lengths 22 and 22+ mm; loc. 100, coll. Schroeder, Nias. RGM 315 259; length 30.9 mm; loc. 102, coll. Schroeder, Nias. N.B. An additional specimen recorded from loc. 93 by Wissema (1947, p. 183) is actually a *Nassaria*.

*Type-locality* — East of Kampung (village) Bawonàuru, Nalawo Valley, Nias, about 200 m above sea level.

*Type-horizon* — Not specified, presumed Plio-Pleistocene.

*Name* — Derived from the Island of Nias, West Sumatra.

*Range* — Plio-Pleistocene.

*Description* — The shells are conspicuously ribbed. The holotype with 5½ or more postembryonal whorls bearing a simple ornament: a strong spiral abapically to the middle of the whorls where a shoulder gradually develops, and on the latter, a second spiral adapically to the first. Along the adapical suture a double spiral, the adapical one of these by far the stronger. Axial sculpture at first consisting of numerous riblets extending from suture to suture, but gradually stronger and less numerous on the later whorls, the overriding spirals likewise by degrees developing node-like inflations. Between the two sets of strong lirae a narrow depressed sutural ramp is formed which deepens gradually while the adapical portion of the whorls becomes inflated. Finely serrated secondary spirals occur between the primary ones, while the adapical sutural spiral disappears, its twin receding from the suture as it grows stronger. The adapical portion of the penultimate whorl bears three strong spirals, the third gradually becoming visible in the suture and more distant than the couple on the shoulder.

The number of ribs is: 7 (last whorl)-8-8-12 (finer ribs)-16: holotype; 7-8-11-?: specimen from loc. 42; 7-7- about 11: both shells from loc. 100; and 8-8-9-?: specimen from loc. 102. The ribs are much weaker in the sutural ramp depression than adapically.

Body whorl large, the ribs disappearing near the siphonal fasciole, which is defined adapically by a shallow spiral depression, the fasciole being somewhat scaly. It turns off from the columella so that a conspicuous umbilical slit is formed. The basal part of the whorl bearing five additional primary lirae and finely serrated interstitial lirae as before: the middle one in each interval between the primary spirals may be stronger than the others, especially in the interspaces close to the adapical spiral depression of this and older whorls.

The adapical part of the columella is slightly concave, bearing a fairly strong fold (its frontal prolongation weaker and curved towards the base) on the siphonal fasciole. This fold is less oblique than the four weaker adapical folds present, the basal one of these situated along the siphonal canal and slightly stronger than the others (in the holotype), or much more so in a specimen from loc. 100.

The edge of the outer lip is sharp and its interior grooved corresponding to the exterior primary lirae. Further inside the aperture a row of plications occurs alternating with the grooves. In the holotype there are maybe 9 plications, in the other specimens about 8. The grooves are well expressed along the whole edge of the outer lip, whereas the basal plications are rather inconspicuous.

Aperture ovoid, adapical channel rather narrow and marked by a parietal ridge on the inner lip. The siphonal canal not well defined at all, in fact, rudimentary, yet deeply notched. A basal labral tooth was not developed as is clearly evinced by the growth lines.

The living *T. buccinea* (Deshayes) looks quite like the new species, but is less markedly ribbed and its sutural ramp wider, shallower and more tilted, its whorls therefore visibly less shouldered. Also, its spiral ornament is somewhat weaker and the primary lirae not quite so node-like on the ribs. A basal labral tooth is likewise absent, the two species evidently being rather closely related.

*Taurasia pendopoensis* spec. nov.

Pl. 2, figs. 7-12.

*Holotype* — RGM 315 253: Pl. 2, figs. 7-9; length 29.4 mm; loc. Pendopo, coll. Huysse, Sumatra.

*Paratypes* — RGM 315 254: Pl. 2, figs. 10-12; length 17.8 mm; loc. Pendopo, coll. Huysse, Sumatra. RGM 315 255; length 24 mm; loc. Pendopo, coll. Huysse, Sumatra.

*Type-locality* — Pendopo, Palembang, South Sumatra.

*Type-horizon* — Not specified, presumably Lower Palembang Beds.

*Name* — Derived from the locality name.

*Occurrence* — Presumably Preangerian: Lower Palembang Beds, south Sumatra.

*Description* — This 'smooth' species resembles *T. javana* discussed above but it is plumper, has less inflated whorls and a less constricted basal part of the last whorl while, finally, a basal labral tooth is absent altogether. It seems to be closer to *T. javana?* from Panay, which may or may not bear a basal labral tooth.

The protoconch is damaged but presumably consists of some 2½ smooth whorls, the last quarter whorl or so with perhaps two very fine spiral lirae, the end of the protoconch being marked by a sharp and opisthocyst axial ridge. The early whorls of the teleoconch bear two abapical spiral lirae, rather strong and forming a distinct angulation of the whorls nearer the abapical than the adapical suture. The adapical one of these lirae is double, except on the first two whorls. Along the adapical suture occurs a third spiral and in the sutural ramp a fourth weaker lira. Secondary spirals are developed between the primary ones, one in each interspace and also one along the abapical suture. Finally, 'tertiary' lirae are formed, and sometimes even finer ones. The angulation disappears on the younger whorls which are then fairly evenly rounded.

Last whorl entirely covered with the same spiral ornament as the previous whorls. The interior of the outer lip bearing some well developed spiral lirae, which may be node-like at some distance from the labral edge: in the figured paratype. The holotype shows 7 lirae and a few weak ones, the figured paratype bears 8 well developed lirae and perhaps two faint ones, the other paratype 6-7 lirae. The growth lines indicate unequivocally that no basal labral tooth was present. Inner lip is moderately well defined, forming a glaze over one or two adapical spirals which thus vaguely delimit an adapical channel.

## Plate 2

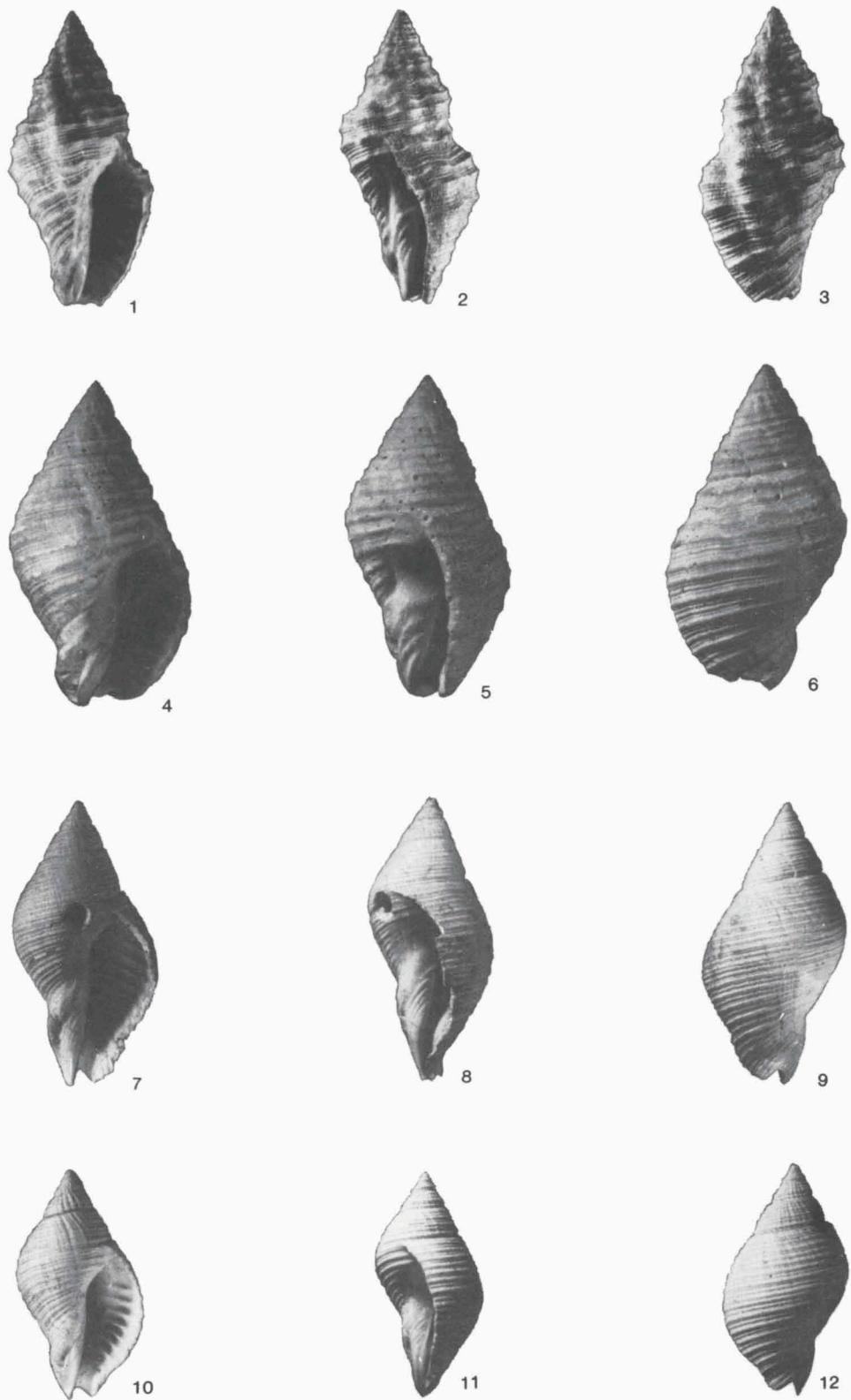
Figs. 1-3. *Taurasia niasensis* spec. nov. Holotype, RGM 315 256, height 33.4 mm. Loc. 64, coll. Schroeder, Nias.

Figs. 4-6. *Taurasia talahabensis* (Martin). Height 33.2 mm. Loc. 144, Rutten, N. Kutai, E. Borneo.

Figs. 7-9. *Taurasia pendopoensis* spec. nov. Holotype, RGM 315 253, height 29.4 mm. Locality: Pendopo, coll. Huysse, Sumatra.

Figs. 10-12. *Taurasia pendopoensis* spec. nov. Paratype, RGM 315 254, height 17.8 mm. Locality: Pendopo, coll. Huysse, Sumatra.

Plate 2



Columella bears a fairly strong and short, oblique fold (weakly prolonged in one of the paratypes) on the siphonal fasciole. There are three to five only slightly more oblique abapical folds, while none appears to accompany the rudimentary siphonal canal. The latter is nevertheless deeply notched and the siphonal fasciole rather well developed.

*Tritonidea? praeundosa* Vredenburg (1923b, p. 70, pl. 2, fig. 1), its holotype merely 16.5 mm long, from the Burmese Kama Beds seems closely related, and perhaps even synonymous, with *T. pendopoensis*, but unfortunately no details of the columella and outer lip of the former are given, so that we are left in the dark as to its true identity. Yet, one may reasonably surmise from Vredenburg's classification that the columella of the Burmese shell bears denticles or even folds.

#### *Taurasia sundaica* (Oostingh, 1935)

*References* — *Nucella (Acanthinucella) sundaica*, Oostingh, 1935a, p. 82, figs. 3a-b; Oostingh, 1938, p. 511.

*Occurrence* — Preangerian: Middle Bodjongmanik Beds, Java.

*Comments* — Oostingh's description and figures do not fit *Acanthinucella*, which has a smooth columella, at all. Instead, they denote a very typical representative of *Preangeria*, complete with basal labral tooth, its nearest relatives undoubtedly being *Preangeria talahabensis* Martin, presently reclassified as a *Taurasia*, and, possibly to a lesser extent, *Tritonidea? praeundosa* Vredenburg.

*T. sundaica* bears a strong adapical columellar fold on the siphonal fasciole, and four, more oblique abapical folds (there is no mention of another, possibly weak one along the siphonal canal). It is plumper than either species compared and the profiles of its whorls appear to be different: the adapical sutural depression, initially present, reportedly disappears completely in Oostingh's 26.5 mm long type, while in the biggest, 33.2 mm long specimen of *T. talahabensis* it is clearly present to the end. Again, all three specimens available of *T. talahabensis* bear axial ribs or inflations to the end, while Oostingh's type has only very fine riblets which disappear on the last whorl. Finally, *T. talahabensis* has no more than two abapical columellar folds, not counting the one along its siphonal canal, instead of the four comparable ones in *T. sundaica*. Whether the differences noted suffice to separate the two species indefinitely remains to be seen.

*Tritonidea? praeundosa* Vredenburg (1923b, p. 70, pl. 2, fig. 1) from the Kama of Burma, even if truly related and a *Taurasia* as surmised, seems to be devoid of coarse axial ornament and to be more intimately related to *Taurasia pendopoensis*, as far as can be judged from Vredenburg's very sketchy description which unfortunately omits mention of the columellar and labral features.

#### *Taurasia talahabensis* (Martin, 1921)

Pl. 2, figs. 4-6.

*Holotype* — RGM 9754; length 24 mm.

*Additional material* — One specimen: Pl. 2, figs. 4-6; length 33.2 mm; loc. 144, Rutten, North Kutai, Kalimantan. RGM 42 216; length 23.4 mm; coll. Van Holst Pellekaan, Mandul Island, Kalimantan.

*References* — *Preangeria talahabensis*, Martin, 1921-1922, pp. 451, 492, pl. 1, figs. 18, 18a-b; Martin, 1928a, pp. 114, 124. *Nassa (Preangeria) talahabensis*, Beets, 1950c, p. 294.

*Occurrences* — Preangerian: Njalindung Beds, Java (holotype), Tjilanang Beds, Java, Gelingseh Beds, loc. 144, Rutten, North Kutai, Kalimantan. Uncertain age: Mandul Island, Kalimantan (mixed collection of fossils).

*Comments* — The two Bornean specimens are typical representatives of the species, their spires being either as plump (specimen from loc. 144) as in the holotype, or slenderer (Mandul shell). No protoconch is preserved. In all specimens the earlier whorls bear distinct riblets which on the younger whorls gradually turn into axial inflations surviving to the end. The sutural ramp depression varies in depth, but, though gradually fainter, is extant to the end even in the biggest shell. The interior of the outer lip bearing five spiral ridges which may be node-like, in the holotype, as in *T. sundaica*, a species with the same number of node-bearing lirae. All three specimens examined show unequivocally by their growth lines that a sharp basal labral tooth was developed, exactly as in *T. sundaica* and *T. angسانانة*.

The strong adapical columellar fold is more oblique in the two smaller specimens than in the more developed Gelingseh shell; this feature then, may be related to maturity. There are three abapical columellar folds, the basal one along the siphonal canal.

*T. sundaica* (Oostingh) is evidently closely related, though apparently not synonymous.

Manuscript received 28 October 1983.