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NOTES ON BULIMULIDAE (GASTROPODA, EUTHYNEURA), 4¹⁾ SOME BULIMULIDEA FROM FRENCH GUYANA AND SURINAM, WITH NOTES ON THEIR ANATOMY

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With 9 text-figures and one plate

During work for a generic revision of the family Bulimulidae some material from French Guyana and Surinam came to my hands. This material stems from the collections of the Muséum National d'Histoire Naturelle, Paris (MNHN), the Rijksmuseum van Natuurlijke Historie, Leiden (RMNH) and the Zoölogisch Museum, Amsterdam (ZMA). The specimens of the present study belong mainly to the genera *Bulimulus* Leach, 1814 and *Drymaeus* Albers, 1850 (among them the type material of Vernhout (1914)).

The following abbreviations have been used: AG, albumen gland; EP, epiphallus; FL, flagellum; OV, ovotestis; P, penis; PR, prostate; SD, spermathecal duct; SP, spermatheca; VD, vas deferens.

Recently Altena (1975) published some data on land Gastropoda from Surinam, including notes on some Bulimulidae. Restudying his material I have the following comments:

- (1) *Drymaeus interruptofasciatus* Vernhout = *Drymaeus semimaculatus* Pilsbry.
- (2) *Drymaeus papyraceus* Mawe sensu Altena = *Drymaeus altenai* sp. n.
- (3) *Drymaeus succineus* was described by Pilsbry (1901), not by Vernhout.
The material upon which Vernhout based his record for Surinam consists of one specimen, which does not fit the redescription of *Drymaeus succineus* as given by Parodiz (1962). [I call in question whether the identification by Parodiz of *succineus* as a member of *Stenostylus* is correct]. It seems better to delete this taxon from the faunal list as given by Altena (1975).
- (4) *Drymaeus quadrifasciatus* Vernhout = *Drymaeus vernhouti* nom. n.
- (5) *Simpulopsis corrugata* Guppy belongs to the Bulimulinae instead of to the Amphibuliminae (misspelled Amphibulimulidae by Altena).

¹⁾ Notes on Bulimulidae, 3. — *Basteria*, 40: 3-6 (1976).

Bulimulus eyriesii (Drouët, 1859) (fig. 1)

Bulimulus (Bulimulus) eyriesii, Breure, 1974: 46, pl. 4 figs. 1-3. [Redescription, references].

To ensure stability of nomenclature it is necessary to designate a lecto- or neotype for this taxon, which could not be undertaken at the time of writing of the above-mentioned revision. A search has been made for the original material of Drouët. As he lived in Troyes and Dijon (Kuiper, 1969) a request was made to the local natural history museums for the whereabouts of his collection. It appeared that this collection is preserved neither in these mu-

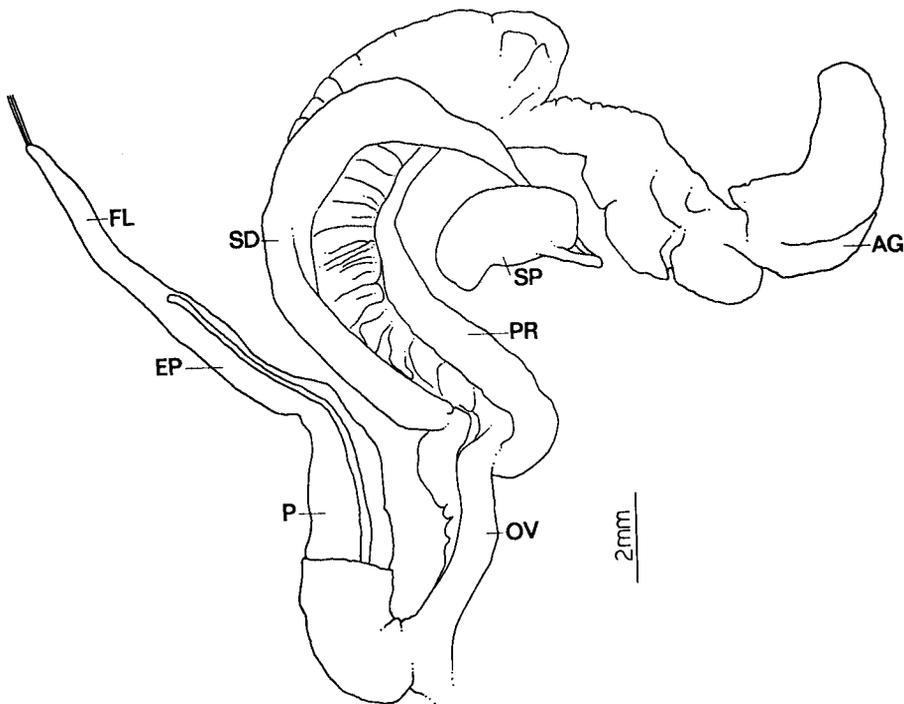


Fig. 1. *Bulimulus eyriesii* (Drouët). French Guyana, near Cayenne (MNHN).

seums nor in the Muséum National d'Histoire Naturelle in Paris and is, therefore, to be regarded as lost. I now select as lectotype the specimen figured on Pl. 1 fig. 12-13 in Drouët (1859).

A lot of 14 specimens collected by F. Geay in 1902 near Cayenne (MNHN) enables me to describe the genitalia of this species.

Genitalia. — Genital atrium relatively short. The penis has a basal sheath

and tapers towards the distal end, where the transition to the epiphallus is without external marks. The epiphallus, which has about the same length as the penis, is slender as is the flagellum, which is of about equal length to the epiphallus. The retractor muscle is inserted at the distal end of the flagellum. The vagina is short, about one fifth of the length of the penis. Oviduct length four times the length of the vagina. The spermathecal duct is sub-cylindrical, narrowing towards the distal end, which bears a bean-shaped spermatheca.

Bulimulus cf. **tenuissimus** (d'Orbigny, 1835) (figs. 2, 3)

Numerous specimens from Surinam in the RMNH-collection are tentatively referred to this Brazilian species. The material originates from the following localities: Nickerie District: Cupido at the Maratakka-River; Nieuw-Nickerie; Sipaliwini. Saramacca District: Raleigh Falls. Suriname District: Paramaribo; Meerzorg; between Weg-naar-Zee and Paramaribo; side-branch 5 of Saramacca Canal; Jodensavanne; Powaka; Mariënborg; Uitkijk. Brokopondo District: Brokopondo.

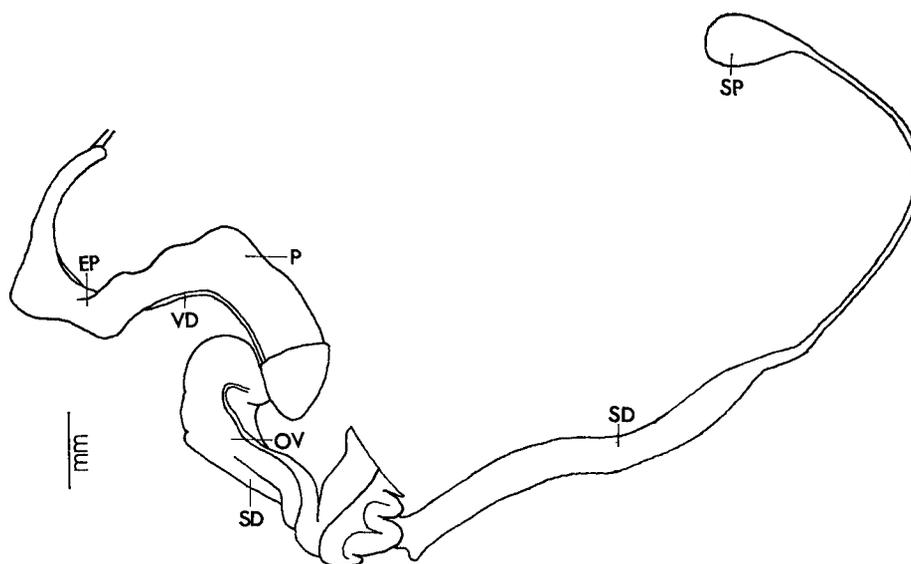


Fig. 2. *Bulimulus* cf. *tenuissimus* (d'Orbigny). Surinam, Paramaribo, Cultuurtuin (RMNH). Drawing by courtesy of Dr. C. O. van Regteren Altena.

Dissection of specimens from several localities in Surinam (RMNH), as well as from Montagnes de Montsanery, French Guyana (MNH) [specimens from the latter locality also are only tentatively referred to this

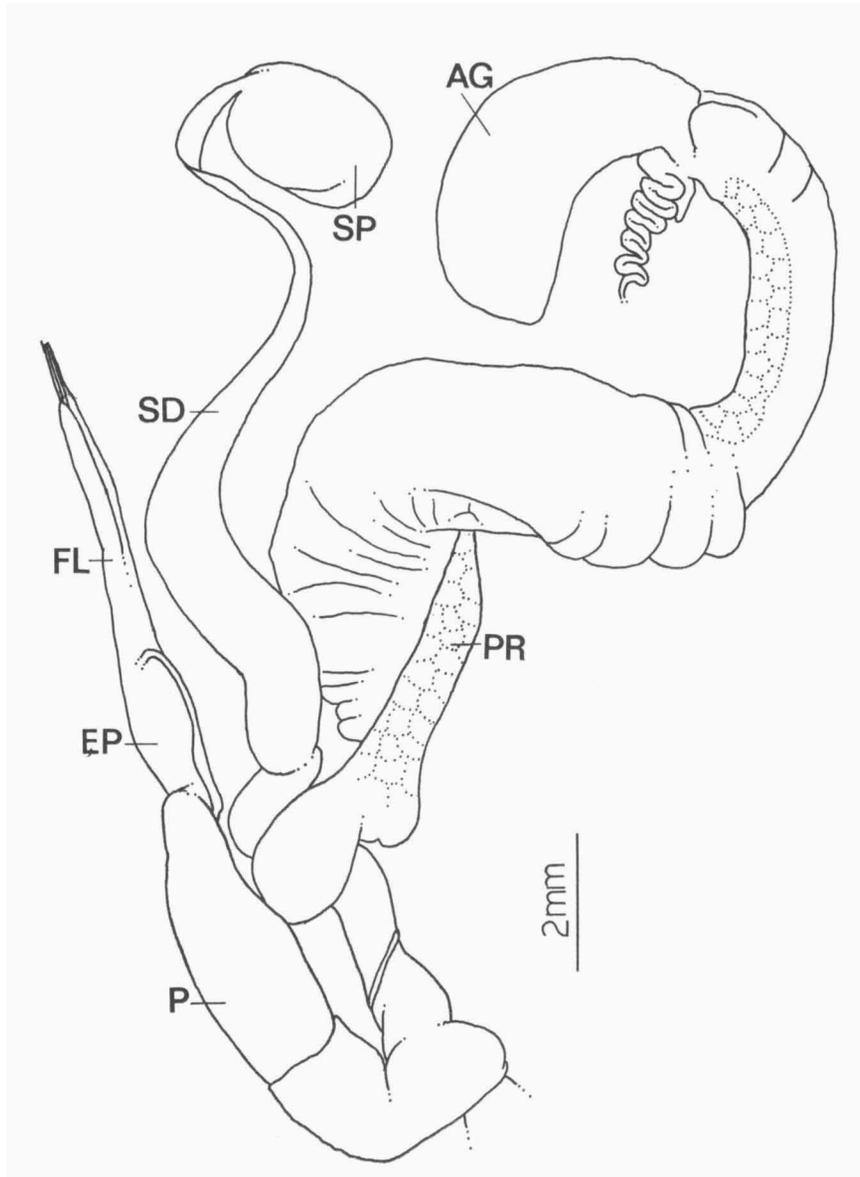


Fig. 3. *Bulimulus* cf. *tenuissimus* (d'Orbigny). French Guyana, Montagnes de Montsancery (MNHN).

species], does not reveal any important differences compared with the data presented by Rezende & Lanzieri (1964) and Araujo, Rezende & Fraga Rodrigues (1960).

***Drymaeus vernhouti* nom. n. (fig. 4)**

Drymaeus quadrifasciatus Vernhout, 1914: 12, pl. 1 fig. 4, not *Drymaeus quadrifasciatus* (Angas, 1878).

The species was described from two specimens, which upon dissection prove to be subadult.

Genitalia. — Penis slender, slightly swollen at distal end. Length of epiphallus slightly more than length of penis. Flagellum about half as long as epiphallus. Vagina and oviduct about equal in length.

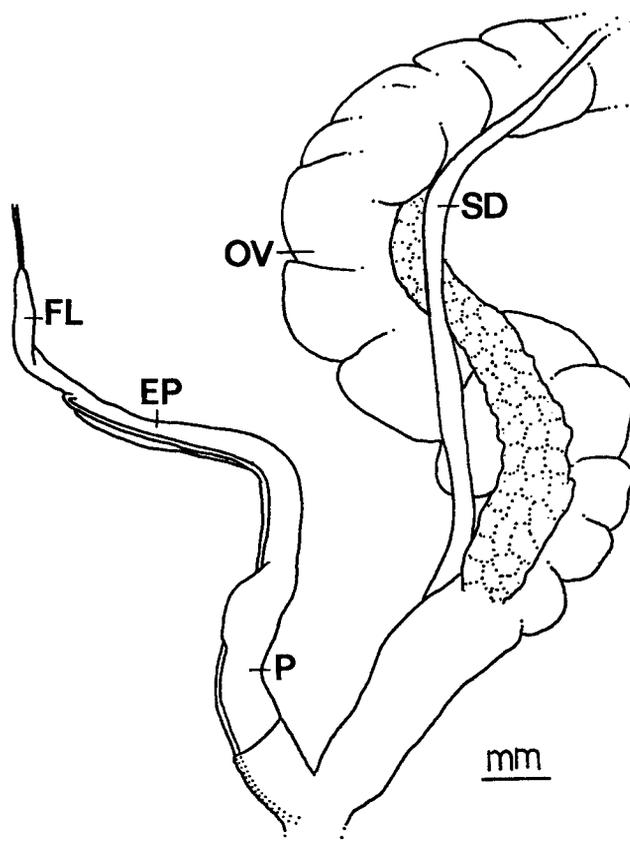


Fig. 4. *Drymaeus vernhouti* nom. n. Surinam, Jan Basi Gado (holotype of *Drymaeus quadrifasciatus* Vernhout, RMNH).

This species resembles *Drymaeus binominis* (E. A. Smith) from Grenada, West Indies.

Drymaeus semimaculatus Pilsbry, 1898

Restudying the type material of *Drymaeus interruptofasciatus* Vernhout, I am unable to separate this species from *D. semimaculatus*. The type of *Drymaeus interruptofasciatus*, preserved in alcohol, proved to be immature. Also the other material of this species described by Vernhout is juvenile.

Fourteen specimens from Ilet-le-Père, French Guyana (MNHN), collected by F. Geay in 1902, are tentatively referred to this species. They differ in having the bands continuous and only lightly brown coloured. Unfortunately these specimens are also immature. Eventually they may prove to belong to *Drymaeus rufolineatus* (Drouët), in which case the relationship between that species and *D. semimaculatus* deserves more attention.

Drymaeus altenai sp. n.

Drymaeus papyraceus, Altena, 1975: 41, fig. 6.

Diagnosis. — A species of *Drymaeus* characterized by its colour-pattern of greyish-white lines and brown streaks, the ovate aperture and the small, brown dots on the greater part of the aperture.

Description. — Shell 30 mm long (apex missing), perforate, sides slightly convex, rather thin. Colour white with greyish-white longitudinal lines and irregular brown streaks. Surface slightly shining, with hardly undulating, incised spiral lines. Whorls ?, slightly convex. Suture well impressed. Aperture ovate, showing the colourpattern inside. Parietal region with callus. Peristome thin, expanded. Columellar margin reflexed. Basal margin, columellar margin, callus and upper part of palatal margin coloured with irregular, small brown dots.

Measurements. — Shell height 30 mm, diameter 16 mm, height of aperture 16.5 mm, width 10.1 mm.

Type locality. — Surinam, near Lucie River.

Material. — ZMA, D. L. Fernandes leg., 1926: holotype.

Remarks. — This species resembles *Drymaeus papyraceus* (Mawe), which is reported by Morretes (1949) from Brazil, States of Bahia, Rio de Janeiro, Paraná and Rio Grande do Sul, and from Argentina, Prov. Corrientes. *Drymaeus altenai* differs in having a less regular colour pattern, a more ovate aperture, with brown dots on its greater part, while a distinct white umbilical patch is absent.

Etymology. — Named in honour of Dr. C. O. van Regteren Altena, who contributed so much to our knowledge of the Surinam malacofauna.

Drymaeus glaucostomus meesi subsp. n. (pl. 1)

This subspecies differs from *Drymaeus glaucostomus glaucostomus* (Albers) by (1) being smaller; (2) being less elongated; (3) that the vertical streaks of the colour pattern continue as far as the suture; (4) the blackish bands which have irregular, somewhat interrupted white lines; (5) having the aperture oblique; (6) the white peristome.

Measurements (in mm):

shell		aperture		number of	
height	diameter	height	width	whorls	
27.0	16.0	14.4	11.3	5.8	holotype
26.5	16.5	15.0	11.5	—	paratype

Type locality. — Surinam, Nassau Mountains, ca. 530 m.

Material. — RMNH 55077 (holotype), RMNH 55078 (paratype); both G. F. Mees leg., 18 July - 9 August 1972.

Etymology. — I have much pleasure in naming this subspecies after the collector, Dr. G. F. Mees, who always makes special effort to collect land snails during his ornithological or ichthyological field work.

Drymaeus chevallieri sp. n. (figs. 5-9)

Diagnosis. — A species of *Drymaeus* characterized by its size, the expanded basal margin of the peristome and the continuous colour bands.

Description. — Shell up to 24 mm, 1.99 times as long as wide, perforate, sides slightly convex, rather elongated, moderately thin. Colour whitish (with five brown spiral bands; see remarks). Surface shining, with incised, undul-

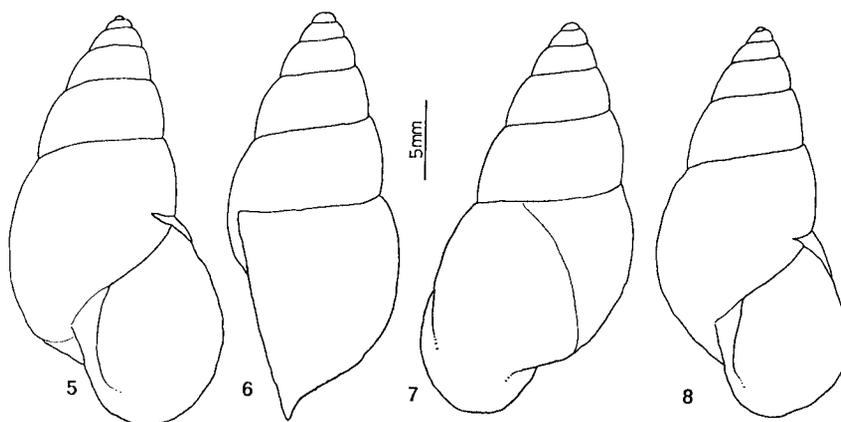


Fig. 5-8. *Drymaeus chevallieri* sp. n. French Guyana, Sant Hermina, Maroni. Holotype (figs. 5-7) and paratype (fig. 8). (MNHN).

ating spiral striae. Whorls 5.8, rather convex. Last whorl rather swollen. Suture well impressed. Aperture ovate, hardly oblique, about 1.55 times as long as wide. Peristome thin, basal margin expanded. Columellar margin reflexed and dilated.

Measurements (in mm):

	shell		aperture		number of whorls	holotype
	height	diameter	height	width		
	24.0	12.7	11.7	7.3	5.9	
	21.9	10.1	10.0	6.4	5.9	
	21.9	11.0	10.3	6.6	6.0	
	20.8	11.0	10.5	6.7	5.5	
	21.5	10.6	10.2	6.5	5.7	
	20.8	10.7	9.9	6.7	5.3	
	20.6	10.2	9.5	6.4	5.7	

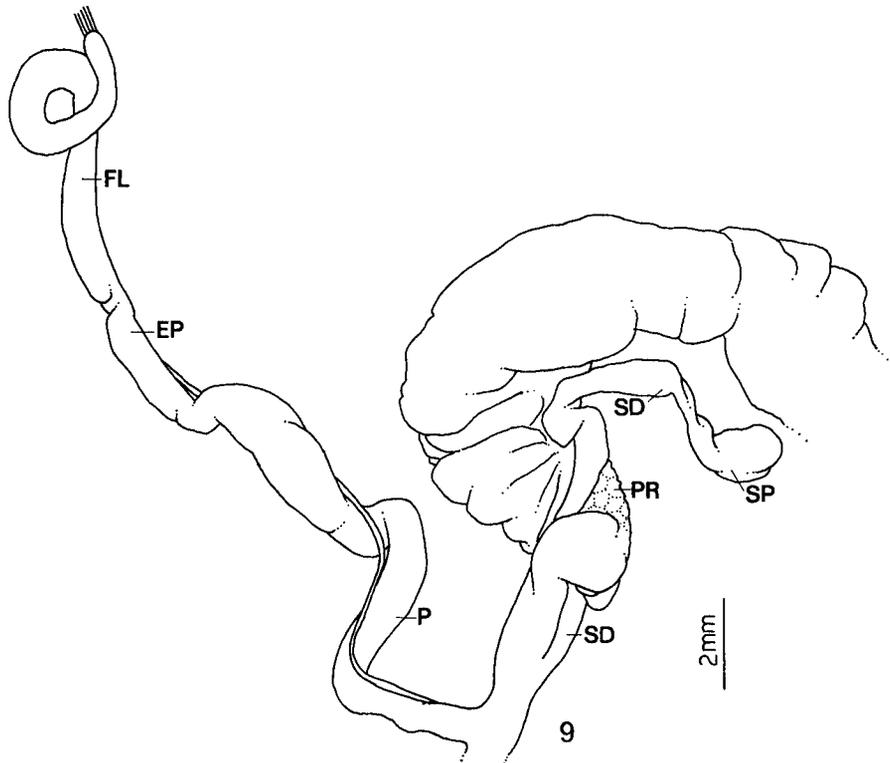


Fig. 9. *Drymaeus chevalleri* sp. n. French Guyana, Sant Hermina, Maroni. (MNHN).

Genitalia. — Penis comparatively long, slightly swollen in basal part, more strongly swollen in distal part. Epiphallus and flagellum slender. Vagina short, about one fifth the length of the penis. Oviduct about twice length

of vagina. Spermathecal duct moderately long, with a club-shaped spermatheca at distal end.

Type locality. — French Guyana, Sant Hermina, Maroni.

Material. — MNHN, 13 specimens from the type locality, F. Geay leg., 1904 (includes holotype); RMNH 9023, one specimen (same data).

Remarks. — This species resembles *Drymaeus semimaculatus* Pilsbry from Surinam but differs in being broader, with a more globose last whorl and a more ovate aperture. Probably because of preservation in alcohol the colour pattern of the shells has faded. However, in some specimens the outer side of the lung cavity shows remnants of the colour pattern, which indicate five brown, continuous spiral bands.

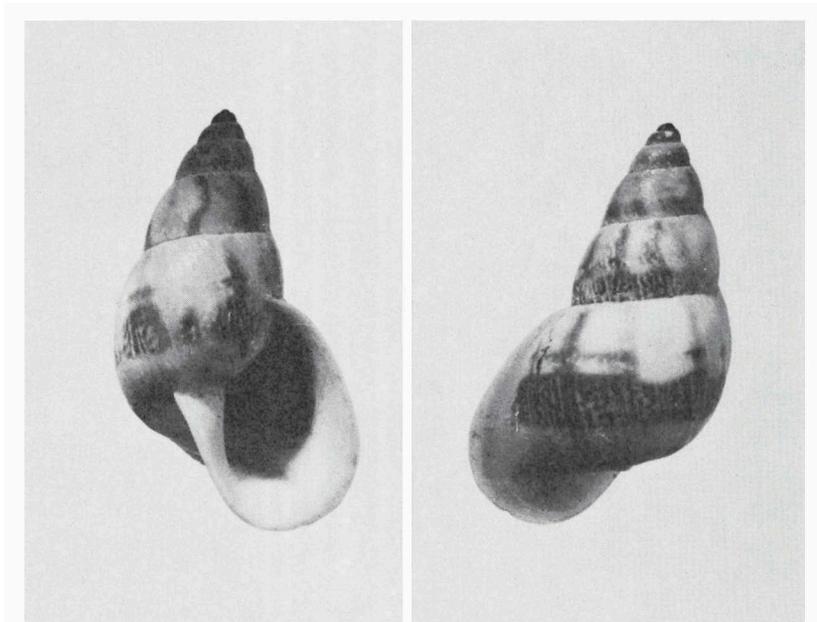
Etymology. — Named in honour of Mr. H. Chevallier (Paris).

Leiostracus ruthveni (H. B. Baker, 1926)

One, possibly subadult, specimen is at hand from Surinam, collected in 1926 near the Lucie River by D. L. Fernandes (ZMA). This is the first record of this species for Surinam. *Leiostracus ruthveni* was described from near Dunoon, British Guiana [= Guyana] and is also recorded from Cayenne, French Guyana.

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Drymaeus glaucostomus meesi subsp. n. Surinam, Nassau Mountains
(RMNH 55077, holotype). Chr. Hoorn phot.