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THE LAND PROSOBRANCHIA OF SURINAME WITH THE DESCRIPTION OF TWO NEW SPECIES OF *NEOCYCLOTUS*

by

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With 3 plates

Vernhout (1914) was the first to publish an account of the land and fresh-water Mollusca of Suriname. In this publication he assembled not only the older literature in which species were mentioned from Suriname, but also he named the Mollusca collected by seven expeditions and some travellers, and included in his paper the material which W. C. van Heurn collected during his trip in 1911. So he laid a sound basis for future investigations.

In the present paper only the land Prosobranchia are treated. On this matter, so far as I know, only one paper has been published since 1914. This paper (Altena, 1960) mentioned *Lucidella lirata* (Pfeiffer) from Tambaredjo and Sidoredjo in the Saramacca district.

The Rijksmuseum van Natuurlijke Historie received specimens from Suriname from many persons to whom I am much indebted for their cooperation. Thanks are also due to Mr. H. E. Coomans who sent me the specimens on loan, which were collected in 1926 by D. L. Fernandes. Here follows a list which mentions in chronological sequence the collectors with the months and the years in which they collected, together with the abbreviations under which they are mentioned in the text.

F : D. L. Fernandes, Wilhelmina Gebergte Expedition, VII-VIII 1926 (for the route, see: Tijdschr. Kon. Ned. Aardr. Gen., 1927, (2) 44: 39, map 6).

Ce : H. W. C. Cossee, III 1939.

A : C. O. van Regteren Altena, I-III 1963.

D : P. H. van Doesburg Jr., III 1963.

H : P. W. Hummelinck, II 1964.

M : W. J. M. Maassen, VI 1967-VI 1968.

BG: M. Boeseman, D. C. Geijskes, D. G. Reeder and P. Staffeleu, West Suriname Expedition, II-IV 1971.

Ms: G. F. Mees and Mrs. Mees, XII 1971 — VIII 1972.

The districts are mentioned from West to East and indicated by Roman numbers. I: Nickerie district. — II: Coronie district. — III: Saramacca district. — IV: Suriname district. — V: Brokopondo district. — VI: Commewijne district. — VII: Marowijne district.

Two families have been treated: Helicinidae and Cyclophoridae; the latter is new to Suriname

HELICINIDAE

Alcacia sericea (Drouet)

Vernhout, 1914: 26.

I: Nickerie River, Meteocamp at Blanche Marie Falls (BG).

III: Raleigh Falls (Ms).

IV: Paramaribo, Cultuurtuin (Ce, M); Paramaribo, on tree trunks (D); Torarica on the Suriname River (A); Jodensavanne, different localities (A, M).

V: Brownsveg, near Irene Falls (M); Brownsberg, 475 m (Ms).

In some specimens the hairs disappear for the greater part when the operculum is still on the shell, but I can not tell whether or not the animal was alive during collecting, because the specimens were dry. The well preserved shells show always hairs which are longer than in the "var. *kühni* Pfr." (Vernhout, 1914: 26). Moreover this "var." is always smaller, smoother, and has mostly a lighter colour. As the two forms are often found together and as there are no transitions between them, I consider them as separate species.

Alcacia kuehni (Pfeiffer)

Vernhout, 1914: 26 (*Alcacia sericea* var. *kühni*).

III: Raleigh Falls, between stones along the falls (M); Tangimama Creek, between stones along the falls (M).

IV: Paramaribo, Cultuurtuin (M); wood at Coropina Creek near Republiek (A); Jodensavanne, various localities (M).

V: Wood opposite Kabel (H); Brownsberg, 475 m (Ms).

See remarks on the previous species. I use the spelling "*kuehni*" instead of "*kühni*" in accordance with the International Code of Zoological Nomenclature, Art. 32 (c) (i).

Lucidella lirata (Pfeiffer)

Vernhout, 1914: 26 (*Lucidella lirata* var. *lamellosa*).

Altena, 1960: 49.

III: Raleigh Falls, between stones along the falls (M).

IV: Paramaribo, Cultuurtuin (Ce, A, M); Paramaribo, on tree trunks (D); Torarica at the Suriname River (A); Jodensavanne (M).

VII: Bigiston, under vegetation of river bank (M).

The var. *lamellosa* Guppy is not recognized here as I found transitions between it and the typical form of the species.

CYCLOPHORIDAE

Neocyclotus (Neocyclotus) rugatus (Guppy) Pl. 2 figs. 4-6, pl. 3 fig. 3

Guppy, 1864: 246 (*Cyclotus r.*).

VII: Nassaugebergte, ca. 530 m (Ms).

The largest of my nine specimens has the following measurements: height 12 mm, greater diameter 15.5 mm, lesser diameter 13 mm. I cannot see any difference of importance with a specimen from Trinidad, 11.5 × 14.5 × 12 mm, or one from Tobago, 14.5 × 19 × 16 mm.

Neocyclotus (Cyclohidalgoa) translucidus dunoonensis

(Bartsch & Morrison)

Bartsch & Morrison, 1942: 273, pl. 30 figs. 7-9 (*Aperostoma (C.) translucidum dunoonense*).

I: Between Lucie River and the summit of the Wilhelmina Mountains, at 43.1 km from the former (F); pit near Avanavero Falls in Kabalebo River (BG).

V: Brownsberg, near Irene Falls (M) and beneath Irene Falls (Ms); Brownsberg, 475 m (Ms).

The three specimens from the expedition to the Lucie River and the Wilhelmina Mountains and the only specimen from Brownsberg, beneath the Irene Falls, are preserved in alcohol and were found living. The three specimens from the pit near Avanavero Falls are without animal, but one shell has the operculum and is well preserved. The largest specimen is from Brownsberg, 475 m, and measures: height 14.5 mm, greater diameter 17 mm, lesser diameter 14.5 mm.

Neocyclotus (Incidostoma) pari nov. spec. Pl. 1 figs. 1-3, pl. 3 fig. 1

Holotype. — Suriname, Marowijne district, Nassau Mountains, ca. 530 m, between 18 July and 9 August 1972, Dr. G. F. Mees collected; RMNH no. 54973.

Description. — The holotype and only specimen was found dead, but still has the operculum. Its measurements are: height 13 mm, greater diameter 23 mm, lesser diameter 20 mm; aperture: height 11 mm, diameter 10 mm. Shell much depressed, with a very broad umbilicus, showing all the previous whorls. Four whorls; nuclear whorls probably $1\frac{1}{4}$, but worn and their number, therefore, not certain. Suture deepened more and more towards the aperture. Sculpture first eroded, but from the last three quarters of the third whorl onward consisting of somewhat irregular prosocline axial riblets; about 7-8 pro mm on the periphery of the last whorl, which is rounded. On this last whorl the axial riblets extend all the way to the wide umbilicus.

Aperture slightly widening on the very last of the body whorl, almost circular, prosocline like the axial riblets, with callus on the previous whorl; outer lip separated from the previous whorl by a moderately wide slit, upstanding at the beginning; before the slit a small thickening inside the aperture. The operculum consists of more than six whorls.

Colour: brown. The last whorl shows a dark brown band in the middle, above this brown band there is a narrow white band, which is about half as wide as the brown band; under the dark brown band the brown colour of the shell changes gradually to almost white at the underside. The aperture is whitish inside.

Derivatio nominis. — *pari* from Parus = titmouse, mees in Dutch; the species being named after Dr. G. F. Mees who collected this and other species.

Discussion. — All of the smaller species of the subgenus *Incidostoma* are higher in relation to their diameter than the present one. The species which appears to be nearest to *Neocyclotus (Incidostoma) pari* nov. spec. is *Incidostoma jacksoni* Morrison (1955: 158, figs. 13-15), but *I. jacksoni* is larger, lacks the white band above the dark brown band on the last whorl, and has no slit which separates the outer lip from the previous whorl.

Neocyclotus (Incidostoma) morrisoni nov. spec. Pl. 2 figs. 1-3, pl. 3 fig. 2

Holotype. — Suriname, Marowijne district, Nassau Mountains, ca. 530 m, between 18 VII and 9 VIII 1972, Dr. G. F. Mees collected; RMNH no. 54976.

Paratypes. — Same locality, date and collector, eight specimens; RMNH no. 54974 and 54975.

Description. — The holotype has the following measurements: height 13 mm, greater diameter 18 mm, lesser diameter 14 mm; aperture: height

8.5 mm, diameter 8 mm. The largest specimen measures $14 \times 19.5 \times 16$ mm; the highest specimen $15 \times 19 \times 15$ mm. All the specimens are dead, but two, among which the holotype, have an operculum. Shell helicoid, with moderately wide umbilicus. Whorls $3\frac{3}{4}$; some of the paratypes with four whorls; protoconch a little more than one whorl. Sculpture: at first the riblets are axial, they become more and more twisting and stronger; on the last whorl they end as nearly straight riblets in the umbilicus. Suture somewhat depressed; whorls almost evenly rounded.

The aperture is placed under a narrow prosocline angle to the axis of the shell; it is almost circular, but shows a slight angle above; callus is present on the previous whorl. The outer lip is separated from the previous whorl by a shallow slit. The operculum has eight whorls.

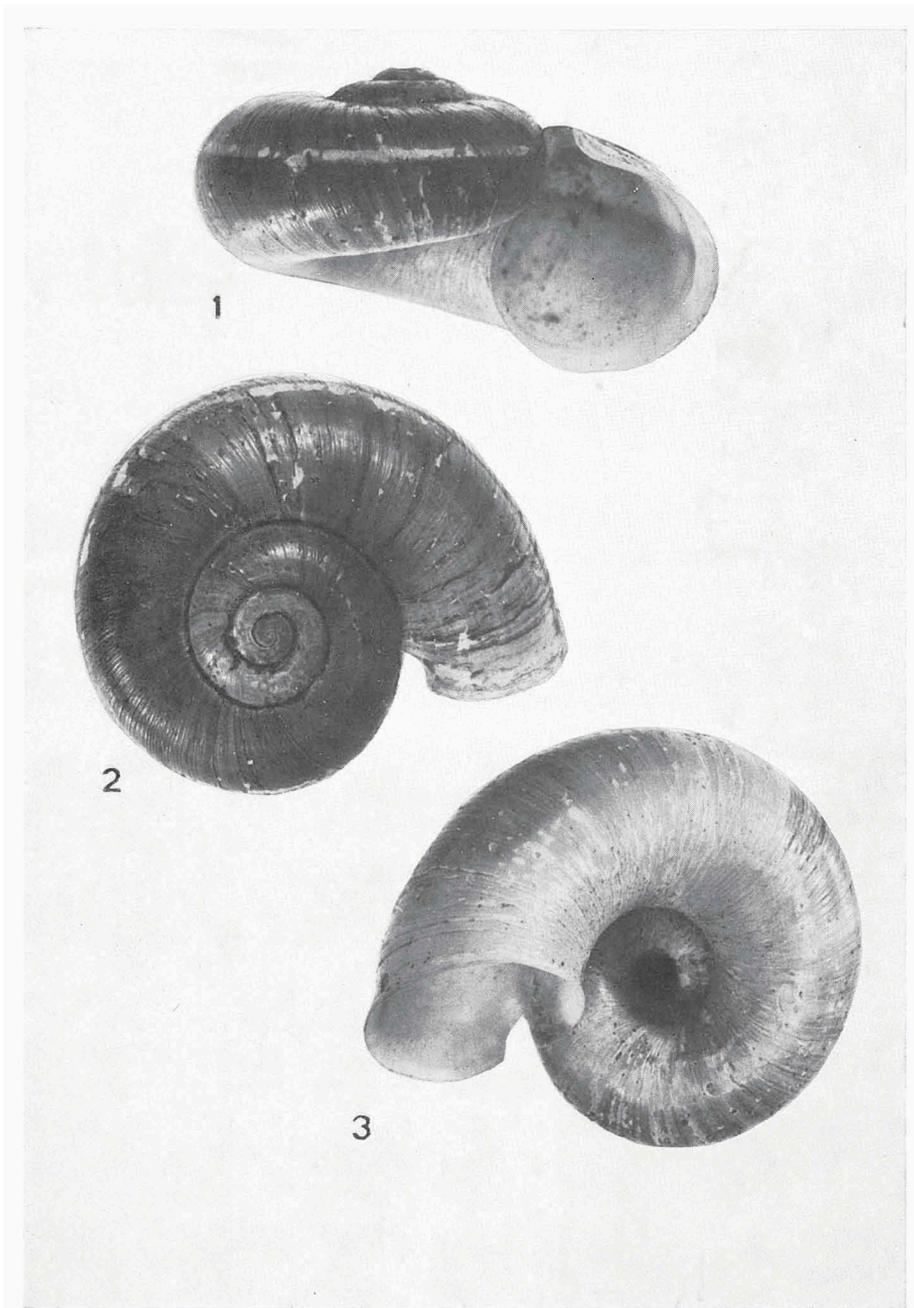
Colour: first whorls more or less eroded, but from the third whorl onward the brown colour is visible, becoming darker on the last whorl. A small part of the last whorl, viz. near the aperture and near the umbilicus is yellowish brown. The inside of the aperture is very pale lilac.

Derivatio nominis. — *morrisoni*, named after Dr. J. P. E. Morrison who identified one specimen as a new species of *Neocyclotus*.

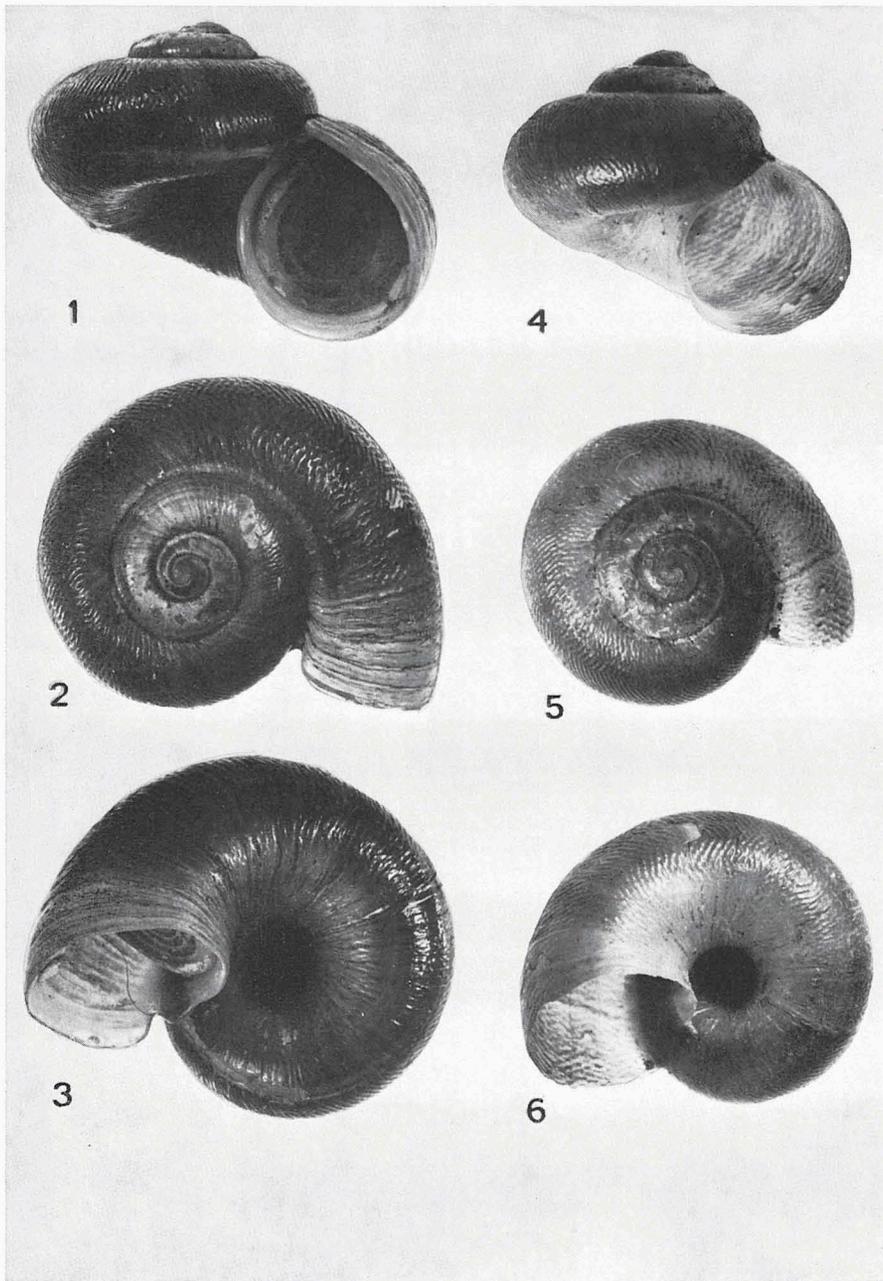
Discussion. — Of this species all the specimens have a distinct slit at the outer lip of the aperture before it joins the previous whorl. Of the smaller species only *Neocyclotus (Incidostoma) stirlingi* (Bartsch & Morrison) (1942: 195, pl. 27 figs. 20-22) shows some resemblance to it. *N. stirlingi*, however, differs from it in sculpture and colour.

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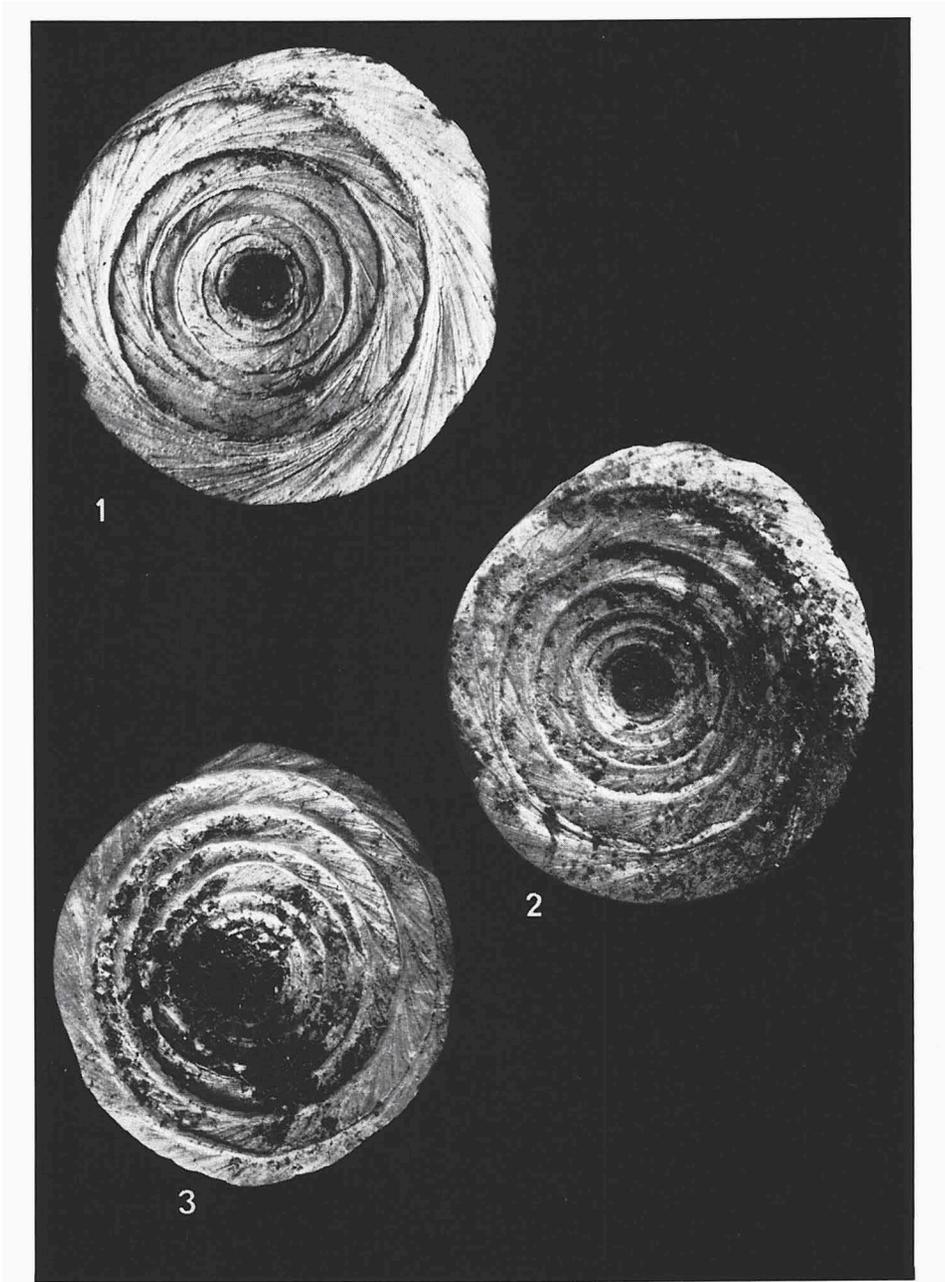
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Figs. 1-3, *Neocyclotus (Incidostoma) pari* nov. spec., $\times 3$.



Figs. 1-3, *Neocyclotus (Incidostoma) morrisoni* nov. spec., $\times 3$; figs. 4-6, *Neocyclotus (Neocyclotus) rugatus* (Guppy), $\times 3$.



Opercula, $\times 8$. Fig. 1, *Neocyclotus (Incidostoma) pari* nov. spec.; fig. 2, *Neocyclotus (Incidostoma) morrisoni* nov. spec.; fig. 3, *Neocyclotus (Neocyclotus) rugatus* (Guppy).