

**THE MARINE MOLLUSCA OF SURINAME (DUTCH GUIANA)  
HOLOCENE AND RECENT  
PART III. GASTROPODA AND CEPHALOPODA**

by

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With 43 text-figures and 11 plates

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I. INTRODUCTION, SYSTEMATIC SURVEY AND PAGE REFERENCES

The first part of this work, published in 1969, is a general introduction to the Suriname marine Mollusca; in the second part, published in 1971, the Bivalvia and Scaphopoda were treated; in this third and last part the Gastropoda and Cephalopoda are dealt with.

The system adopted in this part is that of Thiele (1929, 1931), but more or less altered at several places, in nomenclature as well as in sequence. The holotypes of the species described by the author (1965, 1966, 1968, 1971a and in this paper) are placed in the Rijksmuseum van Natuurlijke Historie at Leiden, except the holotype of *Solariorbis guianensis* Altena which is in the Surinaams Museum at Paramaribo. The Surinaams Museum holds also paratypes of the other new species described by the author and specimens of about all the species found on the shell ridges, washed ashore, or dredged off the coast of Suriname as far as they were mentioned in Part II and III of this publication.

Many persons, who here helpful to me by sending specimens or identifying them, were mentioned in Part I and II of this paper. To these the following should be added.

Mr. P. G. E. F. Augustinus, who visited Suriname three times studying the changing shoreline in relation to physiographic changes in the coastal landscapes, and who collected shells at several localities. In Part II (Altena, 1971b) I mentioned at several places two of his localities, namely  $\pm 15$  km

E (should be  $\pm 12$  km NE) of Nieuw Nickerie, which is indicated here as "(near 57)", and 1.5 km (should be 750 m) of the canal near Totness, mentioned in Part II as well as in this publication as "Totness (59)", a locality at which, taken in a broader sense, other persons collected as well. To these two localities can be added: Burnside (between 58 and 59). Moreover some species were collected on the beach of the eastern bank of the Nickerie River (54) and at the coast near Popogaimama Creek (65), two localities also visited by other collectors. Mr. J. G. de Bruijn was kind enough as to lend me about three quarters of the books and periodicals which I needed from the library of the Teylers Stichting. Without the help of several specialists mentioned in the text this paper could not have been written.

Nevertheless some species or even genera had to remain unidentified, either owing to the lack of conclusive evidence, or because some specialists to whom material has been sent have not yet ended their studies, or because of the impossibility of studying the types. Notwithstanding these gaps I have decided to publish the present paper dealing with Gastropoda and Cephalopoda, because in this way a basis is laid for the study of the marine Mollusca of Suriname, especially that part of the fauna which is found on the shell ridges or washed ashore.

In the following table a! has been added to c and d when the species has been found alive.

Classis Gastropoda Subclassis Prosobranchia Ordo Archaeogastropoda Fissurellidae	drill holes	shell ridges	washed ashore	dredged by the Coquette	page
<i>Diodora cayenensis</i> (Lamarck)	—	r	—	—	9
Trochidae					
<i>Calliostoma</i> ( <i>Calliostoma</i> ) <i>pulchrum</i> (C. B. Adams)	—	—	—	d	10
<i>Calliostoma</i> ( <i>Elmerlinia</i> ) <i>jubbinum</i> (Gmelin)	—	r	—	—	10
<i>Calliostoma</i> ( <i>Kombologion</i> ) <i>adpersum</i> (Philippi)	—	r	—	d!	10
<i>Calliostoma</i> (Subgenus?) <i>carcellesi</i> Clench & Aguayo	—	—	—	d	10
Turbinidae					
<i>Arene</i> ( <i>Marevalvata</i> ) <i>tricarinata</i> (Stearns)	—	—	—	d	11
Neritidae					
<i>Neritina</i> ( <i>Nereina</i> ) <i>meleagris</i> Lamarck	—	—	c?	—	11
<i>Neritina</i> ( <i>Nereina</i> ) <i>virginia</i> (L.)	—	r	c	—	11
<i>Neritina</i> ( <i>Nereina</i> ) <i>zebra</i> (Bruguière)	—	r	c!	—	11
Ordo Mesogastropoda					
Littorinidae					
<i>Littorina</i> ( <i>Littoraria</i> ) <i>nebulosa</i> (Lamarck)	—	—	c!	—	12
<i>Littorina</i> ( <i>Littorinopsis</i> ) <i>scabra angulifera</i> (Lamarck)	—	r	c!	—	13

<i>Littorina (Melaraphe) flava</i> King & Broderip	—	r	c!	—	14
Hydrobiidae					
Hydrobiidae, spec. 1	—	r	c	—	16
Hydrobiidae, spec. 2	—	—	c	—	16
Hydrobiidae, spec. 3	—	—	c	—	16
Rissoidae					
Rissoidae, gen., spec.	—	—	c	—	17
Assimineidae					
<i>Assiminea succinea</i> (L. Pfeiffer)	—	—	c!	—	17
Vitrinellidae					
<i>Vitrinella (Striovitrinella) cupidinensis</i> Altena	—	r	—	—	18
<i>Conchiolepis surinamensis</i> Altena	—	r	—	—	18
<i>Solariorbis guianensis</i> Altena	—	r	—	—	18
<i>Cyclostremiscus caraboboensis</i> Weisbord	—	r	c	—	18
<i>Teinostoma (Pseudorctella) schumoi</i> Vanatta	—	r	—	—	21
Turritellidae					
<i>Turritella (Haustator) variegata</i> (L.)	—	r	c	d!	21
<i>Turritella (Torcula) exoleta</i> (L.)	—	—	—	d!	24
Architectonicidae					
<i>Heliacus bisulcatus</i> (Orbigny)	—	r	c	—	24
<i>Architectonica nobilis</i> Roeding	—	—	c	d!	24
Caecidae					
<i>Caecum regulare</i> Carpenter	—	—	—	d	25
<i>Caecum</i> spec.	b	—	—	d	25
Cerithiidae					
<i>Cerithium</i> cf. <i>eburneum</i> (Bruguère)	—	r	—	—	25
Triphoridae					
<i>Triphora</i> spec.	—	—	—	d	25
Epitoniidae					
<i>Amaea (Amaea) mitchelli</i> (Dall)	—	r	c	—	26
<i>Amaea (Scalina) retifera</i> (Dall)	—	—	—	d	26
<i>Epitonium (Epitonium) albidum</i> (Orbigny)	b?	r	c	—	26
<i>Epitonium (Asperiscala) candeanum</i> (Orbigny)	—	—	c	—	27
<i>Epitonium (Gyroscala) rupicolum</i> (Kurtz)	—	r	—	—	27
<i>Epitonium (Gyroscala) turnerae</i> Altena	—	r	c	—	27
Eulimidae					
<i>Eulima bifasciata</i> Orbigny	—	r	c	—	27
<i>Niso interrupta</i> (Sowerby)	b?	r	c	—	28
Capulidae					
<i>Capulus (Krebsia) intortus</i> (Lamarck)	—	—	—	d!	29
Calyptraeidae					
<i>Calyptraea centralis</i> (Conrad)	b	r	c	d	29
<i>Crucibulum (Dispotaea) striatum</i> (Say)	—	—	—	d!	30
<i>Crepidula plana</i> Say	—	—	—	d!	30
Naticidae					
<i>Polinices hepaticus</i> (Roeding)	—	—	c	—	31
<i>Lunatia marochiensis</i> (Gmelin)	b	r	c!	d!	31
<i>Sinum perspectivum</i> (Say)	—	—	—	d	32
<i>Natica (Naticarius) canrena</i> (L.)	—	—	—	d	32
<i>Natica (Naticarius) cayennensis</i> Recluz	b	r	c	d	32
<i>Natica (Tectonatica) pusilla</i> Say	b	r	c	—	33
Cypraeaidae					
<i>Cypraea (Trona) zebra</i> L.	—	—	—	d	35

Amphiperatidae				
<i>Simnia (Neosimnia) intermedia</i> (Sowerby)	—	—	—	d 35
Cassidae				
<i>Phalium (Tylocassis) granulatum granulatum</i> (Born)	—	—	c	d 35
Cymatiidae				
<i>Cymatium (Linatella) poulsenii</i> (Mörch)	—	—	c	— 36
<i>Cymatium (Ranularia) caribbaeum</i> Clench & Turner	—	—	c	d 36
<i>Cymatium (Septa) krebsii</i> (Mörch)	—	—	—	d 36
<i>Cymatium (Septa) pileare</i> (L.)	—	—	c	— 36
<i>Cymatium (Monoplex) parthenopeum</i> (Salis)	—	—	—	d 37
<i>Cymatium (Cymatium) femorale</i> (L.)	—	—	—	d! 37
<i>Distorsio (Rhysema) clathrata</i> (Lamarck)	—	—	c	d! 37
<i>Charonia tritonis variegata</i> (Lamarck)	—	—	—	d 38
<i>Colubraria lanceolata</i> (Menke)	—	—	—	d 38
Bursidae				
<i>Bursa spadicea</i> (Montfort)	—	r	c	d! 38
Tonniidae				
<i>Tonna galea</i> (L.)	—	r	c	d! 39
<i>Tonna pennata</i> (Mörch)	—	—	c?	— 40
Ordo Neogastropoda				
Muricidae				
<i>Murex (Murex) chrysostruma</i> Sowerby	—	r?	c	— 40
<i>Murex (Murex) messorius</i> Sowerby	—	—	—	d 40
<i>Murex (Murex) donmoorei</i> Bullis	—	—	—	d 41
<i>Murex (Siratus) thompsoni</i> Bullis	—	—	—	d! 41
<i>Murex (Phyllonotus) pomum</i> Gmelin	—	—	c	d! 42
<i>Murex (Chicoreus) brevifrons</i> Lamarck	—	r	c	d! 42
<i>Murex (Favartia) celluloseus nuceus</i> Mörch	—	—	—	d 43
<i>Typhis (Talityphis) expansus</i> Sowerby	—	—	—	d 43
Thaididae				
<i>Trachypollia didyma</i> (Schwengel)	—	—	—	d 43
<i>Thais (Thaisella) coronata coronata</i> (Lamarck)	—	r	c	— 44
<i>Thais (Thaisella) coronata trinitatensis</i> (Guppy)	—	r	c!	— 44
<i>Thais (Stramonita) cruentata</i> (Gmelin)	b	r	c!	d! 46
Columbellidae				
<i>Mitrella lunata</i> (Say)	—	—	—	d 47
<i>Anachis (Parvanachis) obesa</i> (C. B. Adams)	b?	r	c	d 47
<i>Anachis (Parvanachis) radwini</i> nov. spec.	b	r	c	— 49
<i>Anachis (Costoanachis) sertulariarum</i> (Orbigny)	—	r	c	— 51
<i>Anachis (Costoanachis) spec.</i>	—	—	c	— 51
<i>Amphissa (Cosmioconcha) nitens</i> (C. B. Adams)	b?	—	c	d 51
Melongenidae				
<i>Melongena melongena</i> (L.)	—	r	c	d 53
<i>Pugilina morio</i> (L.)	—	r	c!	— 53
Nassariidae				
<i>Nassarius polygonatus</i> (Lamarck)	b	r	c	— 54
<i>Nassarius cf. consensus</i> (Ravenel)	—	—	—	d 55
Fasciolariidae				
<i>Latirus brevicaudatus</i> (Reeve)	—	—	—	d 55
<i>Fasciolaria tulipa</i> (L.)	—	—	c	d! 55
<i>Fusinus closter</i> (Philippi)	—	—	—	d! 56
<i>Fusinus eucosmius</i> (Dall)	—	—	—	d! 56
Olividae				



<i>Olivella (Olivella) cf. adalae</i> Olsson	—	—	c	—	57
<i>Olivella (Olivella) olssoni</i> Altena	—	r	c	d	57
<i>Olivella (Niteoliva) verreauxii</i> (Ducros)	—	r	c	—	57
Mitridae					
<i>Vexillum (Costellaria) hendersoni</i> (Dall)	—	—	—	d	60
Vasidae					
<i>Turbinella laevigata</i> Anton	—	—	—	d!	60
Cancellariidae					
<i>Cancellaria</i> spec.	—	—	—	d!	60
Marginellidae					
<i>Prunum marginatum</i> (Born)	—	—	—	d!	60
<i>Prunum prunum</i> (Gmelin)	—	r	c	d	61
Turridae					
<i>Cerodrillia</i> aff. <i>perryi</i> Bartsch & Rehder	—	—	—	d	62
<i>Clathrodrillia minor</i> (Dautzenberg)	—	—	—	d	62
<i>Polystira albida</i> (Perry)	—	—	—	d!	62
<i>Knefastia</i> spec.	—	—	—	d	62
<i>Pyrgospira</i> cf. <i>tampaensis</i> (Bartsch & Rehder)	—	—	—	d	63
<i>Buchema hadromeres</i> (Melvill)	—	r	—	—	63
<i>Crassispira (Crassispirella) affinis</i> (Reeve)	—	—	—	d	63
<i>Crassispira (Crassispirella) chazaliei</i> (Dautzenberg)	—	—	—	d	63
<i>Compsodrillia eucosmia</i> (Dall)	—	—	—	d	64
<i>Compsodrillia haliostrephis</i> (Dall)	—	—	—	d	64
<i>Glyphostoma (Glyphostomops) claudoni</i> (Dautzenberg)	—	—	—	d	64
<i>Pyrgocythara (Platycythara) spec.</i>	—	r	—	—	64
Conidae					
<i>Conus austini</i> Rehder & Abbott	—	—	—	d!	64
<i>Conus centurio</i> Born	—	—	—	d	65
<i>Conus ermineus</i> Born	—	—	—	d!	65
<i>Conus jaspideus</i> Gmelin	—	—	—	d	66
Terebridae					
<i>Hastula cinerea</i> (Born)	—	r	—	—	66
<i>Terebra taurina</i> ([Lightfoot])	—	—	—	d	66
<i>Terebra</i> spec. 1	—	—	—	d	66
<i>Terebra</i> spec. 2	—	r	—	—	67
Subclassis Opisthobranchia					
Ordo Pleurocoela					
Pyramidellidae					
<i>Sayella (?) solidula</i> (C. B. Adams)	—	r	—	—	68
<i>Odostomia</i> spec.	—	r	c	—	68
<i>Eulimastoma canaliculatum</i> (C. B. Adams)	—	r	—	—	68
<i>Eulimastoma engonium surinamense</i> nov. subspec.	—	r	c	—	70
<i>Eulimastoma weberi</i> (Morrison)	b	—	c	—	72
<i>Egila (?) virginiae</i> nov. spec.	b	r	c	—	73
<i>Mivalda robertsoni</i> nov. spec.	b	r	—	—	75
<i>Phasianema (Iselica) anomalum</i> (C. B. Adams)	—	r	c	—	77
<i>Chrysallida jadisi</i> (Olsson & McGinty)	b	r	c	—	77
<i>Pyrgiscus</i> spec.	—	r	—	d	80
<i>Turbonilla (Strioturbonilla) spec.</i>	b	r	c	d	80
<i>Turbonilla (Chemnitzia) spec.</i>	—	r	c	—	80
Scaphandridae					
<i>Cylichnella biplicata</i> (Lea)	—	r	c	—	82
<i>Cylichna (Acrostemma) caelata</i> (Bush)	—	—	—	d	83

Retusidae					
<i>Retusa (Utrriculastra) canaliculata</i> (Say)	—	—	c	—	83
<i>Volvulella persimilis</i> (Mörch)	—	r	c	d	83
Ordo Notaspidea					
Pleurobranchidae					
<i>Pleurobranchaea hedgpethi</i> Abbott	—	—	—	d!	85
Ordo Nudibranchia					
Arminidae					
<i>Armina muelleri</i> (Ihering)	—	—	—	d!	85
Bornellidae					
<i>Bornella calcarata</i> Mörch	—	—	—	d!	85
Subclassis Pulmonata					
Ordo Basommatophora					
Ellobiidae					
<i>Melampus (Detracia) paranus</i> (Morrison)	—	—	c!	—	86
<i>Melampus (Melampus) coffea</i> (L.)	b	r	c!	—	86
<i>Blauneria heteroclita</i> (Montagu)	—	—	c!	—	87
<i>Ellobium pellucens</i> (Menke)	—	r	c!	—	88
Classis Cephalopoda					
Ordo Decapoda					
Spirulidae					
<i>Spirula spirula</i> (L.)	—	—	c	—	88

## 2. GASTROPODA AND CEPHALOPODA

In this chapter the literature cited for every species contains: (1) the original description and type locality, when mentioned; (2) sources facilitating identifications; (3) reports of occurrences in Suriname and the two other Guianas, except the popular accounts treated in the first part of this study.

In the paragraph "Occurrence in Suriname" the known localities in that country are given. The numbers placed in parentheses after the localities from "Drill holes", "Shell ridges" and "Washed ashore" refer to the numbers indicated on the map published in the first and second part of this work (Altena, 1969a, pl. 4; 1971b, map at the end) and republished here on pl. II. Since the second part was published a shell ridge near Alliance was visited a few times, Alliance (44) being therefore also mentioned as a shell ridge. The numbers and capitals mentioned in "Dredged off the coast" and VRA stations, as far as their depth is known, are also entered in this map; of the VRA stations the numbers are encircled. Localities placed between quotation marks, of which is known that they are situated off the Suriname coast are omitted from this map, and the same applies to the VRA stations from which the depth is unknown. Some particulars of these stations may be found in my publication of 1969a on page 42 and the table facing this. Depth in fathoms indicate the depth range whence the species is known with certainty. If the depth range of a station

(or stations) exceeds the known maximum or minimum depths for the species, these lower or higher values are given in parentheses. So the depth of *Distorsio (Rhysema) clathrata* (Lamarck), dredged at 8-17½, 14-29, 15, 20, 22, 23, 24, 25, 26, 27 fathoms, has been given as (8-)15-27 (-29) fathoms.

The following abbreviations have been used:

BM(NH): British Museum (Natural History), London.

IRSN: Institut Royal des Sciences Naturelles, Brussels.

MP: Surinaams Museum, Paramaribo.

PMNH: Peabody Museum of Natural History, Newhaven.

RNHL: Rijksmuseum van Natuurlijke Historie, Leiden.

USNM: United States National Museum, Washington.

UZM: Universitetets Zoologiske Museum, Copenhagen.

Species found on the shell ridges and/or washed ashore are almost all figured here. Several species, e.g. all Turridae except one, from "Dredged off the coast" are likewise figured.

Classis Gastropoda  
Subclassis Prosobranchia  
Ordo Archaeogastropoda  
FISSURELLIDAE

***Diodora cayenensis*** (Lamarck) (pl. 8 figs. 1, 2)

Lamarck, 1822a: 12 (*Fissurella c.*, les mers de la Guyane).

Delessert, 1841: pl. 24 fig. 5 (*Fissurella cayennensis*).

Deslongchamps, 1859: 40, reprint: 23 (*Fissurella cayanensis*).

Farfante, 1943: 5, pl. 2 figs. 1-6.

Weisbord, 1962: 50, pl. 2 figs. 15-20 (with list of references).

The specimen from Coronieweg, km 106, has a length of 16 mm, the one found near "Lekbeteugelingsdam" near the Maratakka measures 11 mm; from the ridge near Cupido on the Maratakka we have three fragments. The specimens are young or fragmentary and, therefore, their identification remains somewhat doubtful.

Occurrence in Suriname

Shell ridges. — Cupido (4); "Lekbeteugelingsdam" near the Maratakka (downstream 4); Coronieweg, km 106 (8).

Occurrence in the other Guianas

Living on the coast or dredged off the coast. — Les mers de la Guyane (Lamarck); Cayenne, île St. Joseph, îlet de la Mère, all French Guiana (Deslongchamps).

## TROCHIDAE

**Calliostoma (Calliostoma) pulchrum** (C. B. Adams)

C. B. Adams, 1850: 69 (*Trochus pulcher*, Jamaica) (non vidi).

Clench & Turner, 1950a: 331, pl. 40 fig. 7 (*Trochus pulcher*); 1960: 17, pl. 3 fig. 3, pl. 14.

My specimen differs from the holotype, but I consider it to belong here, as the species is rather variable and my specimen agrees with fig. 1 of plate 14 of Clench & Turner (1960).

Occurrence in Suriname

Dredged off the coast. — Station "6" (off the Suriname coast); 24 fms.

**Calliostoma (Elmerlinia) jujubinum** (Gmelin) (pl. 5 figs. 1-4)

Gmelin, 1772: 3570 (*Trochus jujubinus*, "rarus ad insulam S. Mauritii & in mari Americam australem alluente").

Clench & Turner, 1960: 31, pl. 5 fig. 2, pl. 9 fig. 1, pl. 21.

Two fragments from ridge no. 454 at the Coronieweg collected by the Suriname Expedition 1948-1949 agree very well with this species.

Occurrence in Suriname

Shell ridges. — Coronieweg, ridge 454 (8).

**Calliostoma (Kombologion) adpersum** (Philippi) (pl. 8 fig. 3)

Philippi, 1851: 217, pl. 32 fig. 8 (*Trochus adpersus*, Brasilien).

Clench & Turner, 1960: 46, pl. 30, pl. 31.

From the Coronieweg, km 106, we have two fragments, both being the last whorl. They were collected by Mr. P. Creutzberg. Three specimens were dredged by the "Coquette", of which one, from Station 289, has the dried animal inside.

Occurrence in Suriname

Shell ridges. — Coronieweg, km 106 (8).

Dredged of the coast. — Station E2 (NNW of Marowijne River, 30 miles off the coast), 250-256 (6°41' N 55°26.5'-55°43' W), 289 (6°52.5' N 55°53' W); 20-27 fms.

**Calliostoma (subgenus?) carcellesi** Clench & Aguayo

Clench & Aguayo, 1940: 80, pl. 14 fig. 4 (off Punta Rubio, Argentina, 40°22' S 60°35' W) (non vidi).

Clench & Turner, 1960: 57, pl. 38, pl. 39.

When I had identified the only specimen as *Calliostoma carcellesi*, I sent it to Dr. K. J. Boss who kindly compared it with other specimens. He wrote to me (in lit. 24 June 1970): "I have compared it with a series of *carcellesi* in which there were specimens of a similar size and I think they are conspecific".

Occurrence in Suriname

Dredged off the coast. — Station F1 (N of Suriname River, 20 miles off the coast); 15 fms or less.

## TURBINIDAE

***Arene (Marevalvata) tricarinata*** (Stearns)

?Tuomey & Holmes, 1857: 118, pl. 26 fig. 4 (*Trochus gemma*, pleiocene fossil of Pee Dee, South Carolina).

Stearns, 1872: 23 (*Architectonica tr.*, Long Key and shores of mainland, Tampa Bay, west coast of Florida).

My only specimen agrees with the holotype of *Arene tricarinata* (Stearns) in the USNM. I have seen a xerocopy of the original description and figure of *A. gemma* Tuomey & Holmes, but I should like to have more certainty before synonymizing *A. gemma* with *A. tricarinata*, the figure of the former being very poor while the description gives the size as 7 mm, my specimen measuring about 3 mm.

Occurrence in Suriname

Dredged off the coast. — Station VRA 17 (N of lightship); 17 fms.

## NERITIDAE

***Neritina (Nereina) meleagris*** Lamarck

Lamarck, 1822a: 187 (Saint Domingue).

Russell, 1941: 379, pl. 3 figs. 3, 4.

One specimen, of which the identification is dubious, was found at Coppename Point; it is subfossil.

Occurrence in Suriname

Washed ashore. — Coppename Point (62).

***Neritina (Nereina) virginia*** (L.) (pl. 1 figs. 1, 2)

Linnaeus, 1758: 778 (*Nerita v.*, in M. Mediterraneo).

Russell, 1941: 374, pl. 2 figs. 7, 8, pl. 7 fig. 1.

Occurrence in Suriname

Shell ridges. — Cupido (4).

Washed ashore. — Braampunt (80); near Matapica Canal (84).

***Neritina (Nereina) zebra*** (Bruguière) (pl. 1 figs. 3-7)

Bruguière, 1792b: 126 (*Nerita z.*, Cayenne).

Troschel, 1848: 545, 550.

Vernhout, 1914: 25.

Russell, 1941: 390, pl. 4 figs. 1, 2.

Graham, 1955: pl. 2 fig. 8 (*Nerita Viginea* [sic]).

Durand, 1960: 35.

Altana, 1969a: 10, 23, 26, 28, 43, 44.

Green & Hill, 1971: 20, pl. 1 fig. 1.

This is a brackish water species which occurs in the estuaries and to some extent in the rivers, often in great quantities.

Occurrence in Suriname

Shell ridges. — Stalweide (1); Ignikondre, km 134 (6); Carl François, km 71 (10).

Living (!) or washed ashore. — Near mouth of Corantijn River (51); beach Nieuw Nickerie (? 52); Nickerie River at Nieuw Nickerie (53 or 54); Totness (59); Leiding 5, near Paramaribo (!, no number); near mouth of Sommelsdijkse Creek (!, near 73); Combé (!, 73); bank of Suriname River and wreck of "Goslar" near Paramaribo (!, south of 73); Tout-lui-faut Canal, S. of Paramaribo (!, no number); Jodensavanne (south of 76); Krofajapassie to 9½ km E (86-87½); Tijgerbank (92); Galibi, creek (!, 93); Langamankondre-Christiaankondre (94-95); near Wane Creek (!, 96); Albina (!, 97); Bigiston, Marowijne River (!, south of 97).

Occurrence in the other Guianas

Living or washed ashore at the coast. — Guyana, at the mouth of Essequibo and Demerara Rivers (Troschel); Guyana (Graham); Cayenne, French Guiana (Russell); French Guiana (Durand).

LITTORINIDAE

**Littorina (Littoraria) nebulosa** (Lamarck) (fig. 1a, pl. 5 fig. 5)

Lamarck, 1822b: 54 (*Phasianella n.*, Saint-Domingue).

Horst & Schepman, 1899: 280 (*L. columellaris*).

Bequaert, 1943: 11, pl. 4 figs. 1-4.

Altena, 1969a: 11, 13 (tantum).

Weisbord, 1962: 117 (with list of references), pl. 8 figs. 16, 17.

Dr. J. Rosewater kindly wrote to me that *L. nebulosa* and *L. flava* are in fact different species. *L. nebulosa* can be discerned from *L. flava* by being somewhat narrower in relation to its height, having the suture more impressed, the sculpture finer, and above all in having quite another shape of the penis (fig. 1a). The groove is continuous to the top of the penis, a feature not to be seen in the figure.

The species has been found only in three or four localities in Suriname.

In my paper (1969a: 11) I stated that it is common in the intertidal zone in Suriname. Although the identification of the specimen found by Dr. H. ten Kate proved to be correct, *L. flava* King & Broderip is much more common on the coast of Suriname, as it appears from my references of this species and *L. flava*.

Occurrence in Suriname

Living. — Near Matapica Canal (84); Wiawia coast, on beach (doubtful, ♀ specimens, 89); Wiawia coast-Gadoholo, on parwa (*Avicennia nitida*) in

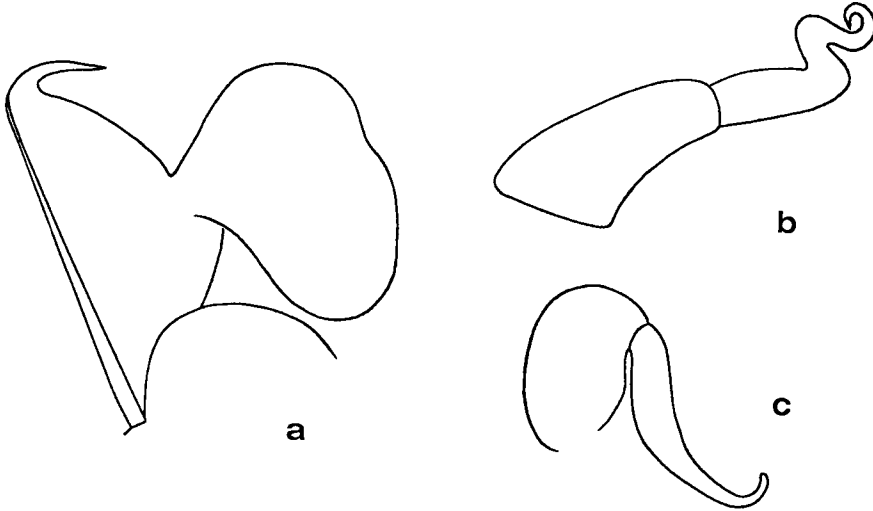


Fig. 1a-c. a: *Littorina nebulosa* (Lamarck), Suriname, penis  $\times 10$ ; b, c: *Littorina flava* King & Broderip, Suriname, penis  $\times 10$ .

the surf (89-90); at the mouth of the Marowijne River (ten Kate coll., about 92).

Occurrence in the other Guianas

Living. — Georgetown, Guyana (doubtful, one ♀, RNHL).

***Littorina (Littorinopsis) scabra angulifera*** (Lamarck) (pl. 1 figs. 8, 9)

[Linnaeus, 1758: 770 (*Helix scabra*, no locality)].

Lamarck, 1822b: 54 (*Phasianella angulifera*, l'Océan des Antilles).

Deslongchamps, 1859: 52, reprint: 35 (*L. angulifera*).

Bequaert, 1943: 23, pl. 7 figs. 1-7 (*L. angulifera*).

Altena, 1969a: 23, 26 (*L. angulifera*), 23, 26 (*L. angulata*).

Green & Hill, 1971: 21, pl. 1 figs. 2, 2, 2 (*L. angulifera*).

This subspecies lives at the same places as *L. flava* and is the Atlantic counterpart of the Pacific *L. scabra scabra* (L.) (Rosewater, 1970: 423 = 05-267). It is found in not nearly so great quantities as *L. flava*. Sometimes it goes still higher up and also further into the estuaries than that species.

We obtained a single fragment from the shell ridges.

Occurrence in Suriname

Shell ridges. — Cupido (4).

Living (!) or washed ashore. — Near mouth of Corantijn River (51); sea-dike near Nieuw Nickerie (!, 52); Totness (59); end of Fernandez Road (!, 69); Purmerend (!, 70); jetty at Leonsberg (!, 71); Braamspunt (!, 80); near Matapica Canal (!, 84); Krofajapassie to 9½ km E (!, 86-87½);

Bigisanti (88); Wiawia coast (!, 89); Gadoholo (!, 90); mouth of Marowijne River near Eilanti (!, no number).

Occurrence in the other Guianas

Living (!) or washed ashore. — Georgetown, Guiana (!, RNHL); Cayenne, French Guiana (!?, Deslongchamps).

**Littorina (Melaraphe) flava** King & Broderip (fig. 1b, c,  
pl. 5 figs. 6, 7)

King & Broderip, 1832: 345 (Rio de Janeiro).

Deslongchamps, 1859: 52, reprint: 35 (*L. rudis*).

Schepman, 1887: 155 (*Littorina columellaris*).

IJzerman, 1931: 36 (*L. nebulosa*).

Bequaert, 1943: 13, pl. 4 figs. 5-7 (*L. nebulosa fl.*).

Graham, 1955: pl. 2 fig. 20 (*L. scalra* [sic]).

Durand, 1960: 34, 35 (*L. nebulosa*).

Marcus & du Bois-Reymond Marcus, 1963: 18, figs. 18-20.

Altena, 1969a: 19, 20, 23, 43, 44, pl. 2 figs. 7, 11 (tantum; *L. nebulosa*).

Green & Hill, 1971: Appendix 2, between 84 and 85, pl. 1 fig. 3 (*L. nebulosa*).

See *L. nebulosa*.

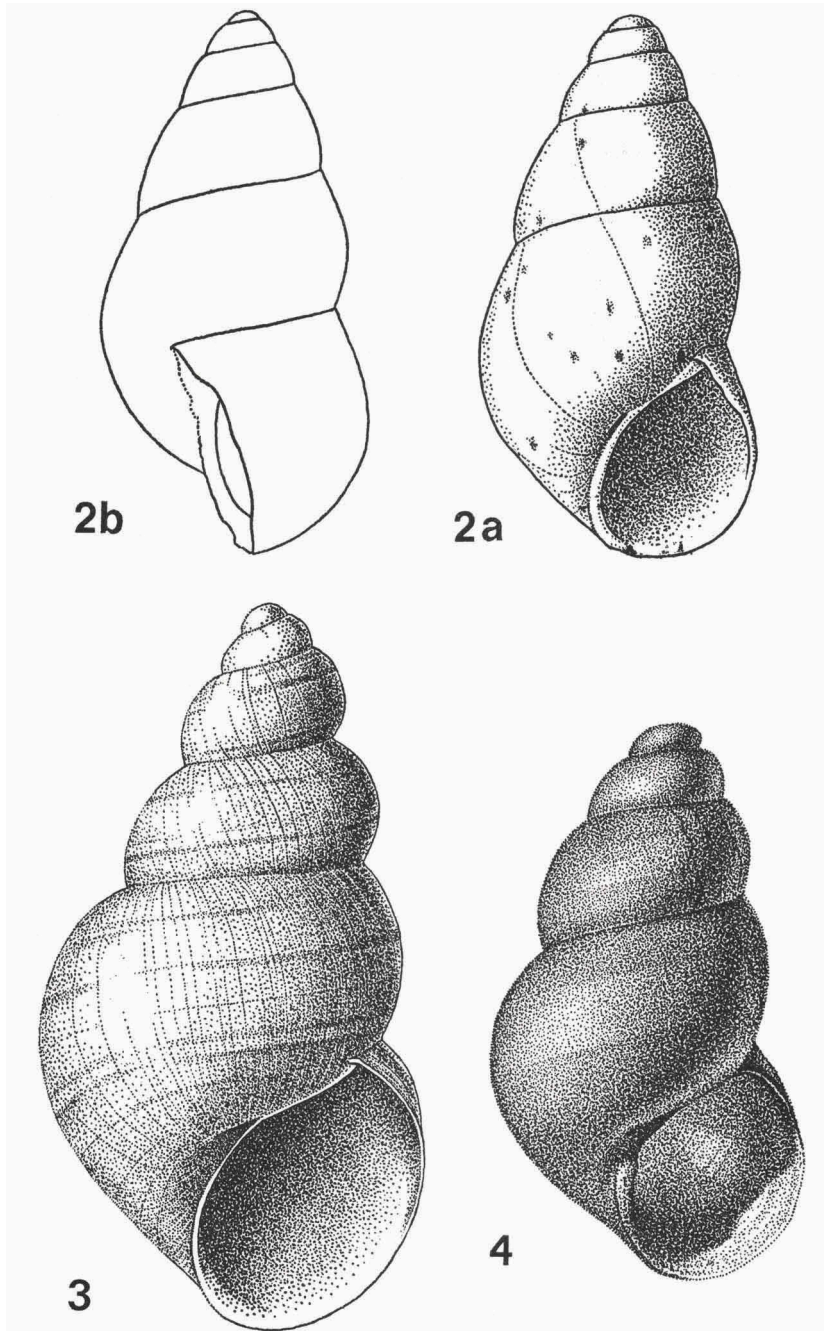
Dr. J. van der Land was so kind as to make a slide of a male specimen of *L. neritoides*. This slide made clear that a groove in the body continues as a duct into the penis and close near the top of the penis becomes a very short groove. The penis has the shape of an equilateral triangle, which is much longer than broad and flattened on both sides. There are some differences between the penis of *L. neritoides* and that of *L. flava*. In the last mentioned species the penis is clearly divided into two parts and the duct ends just at the top. Perhaps a new subgenus is necessary for *L. flava*, but more species of *Littorina* should be studied anatomically before deciding upon this question.

This species is found in great numbers on the coast, living on trunks, branches of parwa (*Avicennia nitida*) and on the sea-dike of Nieuw Nickerie, near or above the high water line (Altena, 1969a: pl. 2 figs. 7, 11). Only *L. scabra angulifera* is sometimes found higher up.

I measured nine pairs obtained from branches of *Avicennia* near the mouth of Matapica Canal with the following result:

♀ height	15.5 mm,	breadth	12 mm;	♂ height	12 mm,	breadth	9 mm
" "	15 " , "	" "	11 " ;	" "	14.5 " , "	" "	10 "
" "	15 " , "	" "	11 " ;	" "	11 " , "	" "	8 "
" "	14 " , "	" "	11 " ;	" "	11.5 " , "	" "	10 "
" "	13.5 " , "	" "	10 " ;	" "	13 " , "	" "	9 "
" "	13 " , "	" "	9 " ;	" "	10 " , "	" "	8 "
" "	12.5 " , "	" "	9.5 " ;	" "	10.5 " , "	" "	8 "
" "	12 " , "	" "	9 " ;	" "	13 " , "	" "	10 "
" "	11.5 " , "	" "	8.5 " ;	" "	12 " , "	" "	9.5 "





Figs. 2a, b. Hydrobiidae, spec. 1, shell ridge near Groningen, Saramacca District, 23 VI 1955, Dr. D. C. Geyskes coll.; height 2.6 mm. Mr W. Bergmans del.  
 Fig. 3. Hydrobiidae, spec. 2, beach near Toeholi Creek, Saramacca District, 11 VI 1959, Dr. D. C. Geyskes coll.; height 2.9 mm. Mr. W. Bergmans del.  
 Fig. 4. Hydrobiidae, spec. 3, beach near mouth of Corantijn River, Nickerie District, 19 III 1963, Dr. C. O. van Regteren Altena coll.; height 2.7 mm. Mr. A. Bos del.

It will be seen that the average height of the males is slightly less than 90% of that of the females.

This being by far the commonest species in Suriname, I have merely cited in the above synonymy the records given by Deslongchamps, IJzerman, Durand and Green & Hill. These records of which I have not examined the specimens are not further dealt with here.

Occurrence in Suriname

Shell ridges. — Van Drimmelpolder (2); Cupido (4); Post Groningen (15, Schepman); Anna Catharina (34, Schepman).

Living (!) or washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (!, 52);  $\pm$  12 km NE of Nieuw Nickerie (near 57); between Kweriman Creek and Tweeling Creek (!, between 56 and 58); Burnside (between 58 and 59); Toniholo (!, 67); end of Fernandez Road (!, 69); Braamspunt (!, 80); near Matapica Canal (!, 84); Wiawia coast, beach (!, 89); Wiawia coast-Gadoholo, on parwa (!, 89-90).

Occurrence in the other Guianas

Living on the coast. — Guyana (Graham); French Guiana (Durand).

#### HYDROBIIDAE

Three species, of which I have only seen the shells and do not know the anatomy, are considered to be Hydrobiidae with some doubt. These shells are treated here as species 1, 2 and 3; their distribution in Suriname is put on record.

##### Species 1 (fig. 2a, b)

Occurs in great quantities on the ridge near Cupido on the Maratakka, but also on other ridges and at some coastal localities.

Occurrence in Suriname

Shell ridges. — Van Drimmelpolder (2); Cupido (4); Kilometre stone 72½ (11); Groningen (15).

Washed ashore. — Near Popogaimama Creek (65); Krofajapassie (86).

##### Species 2 (fig. 3)

Occurrence in Suriname

Washed ashore. — Camping site 11/12 VI 1959 (64); near Popogaimama Creek (65); near Toeholi Creek (66); near Matapica Canal (84).

##### Species 3 (fig. 4)

Occurrence in Suriname

Washed ashore. — Near mouth of Corantijn River (51);  $\pm$  12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Popogaimama Creek (65); Braamspunt (80).

## RISSOIDAE

## Rissoidae, genus, species (fig. 5)

Dr. D. R. Moore of the Marine Laboratory of the University of Miami, Florida, has not yet come to a conclusion as to which species or even genus this single specimen belongs, mainly because the contents of the shell and the operculum are lacking. This is the only Rissoid that has been found washed ashore in Suriname; it is here figured.

Occurrence in Suriname

Washed ashore. — Near mouth of Corantijn River (51).

## ASSIMINEIDAE

**Assiminea succinea** (Pfeiffer) (fig. 6)

Pfeiffer, 1840: 253 (*Paludina s.*, Cuba).

Altena, 1969a: 23.

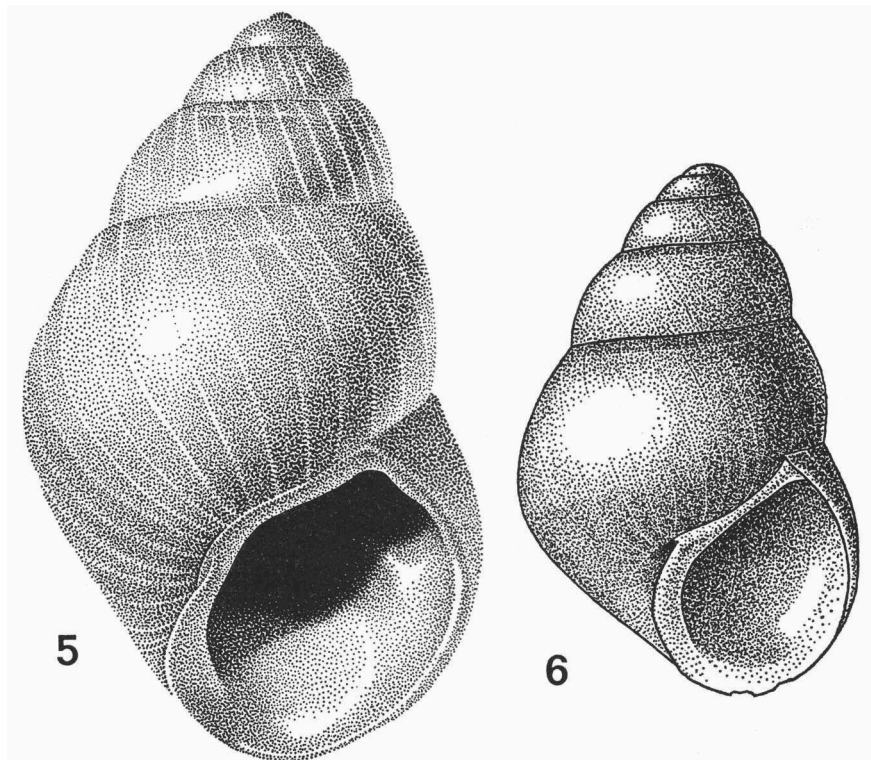


Fig. 5. Rissoidae, gen. spec., beach near mouth of Corantijn River, Nickerie District, 19 III 1963, Dr. C. O. van Regteren Altena coll.; height 3.8 mm. Mr. W. C. G. Gertenaar del.  
Fig. 6. *Assiminea succinea* (L. Pfeiffer), "Nickerie", date?, specimen lost; height somewhat more than 2 mm. Mr. W. Bergmans del.

The species probably can be found alive at localities along the whole coast, although living individuals have so far been found only at Braamspunt.

Occurrence in Suriname

Washed ashore. —  $\pm$  12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Hermina flat (63); near Popogaimama Creek (65); near Toeholi Creek (66); Toniholo (67); Braamspunt (80); near Kat Creek (82); Krofajapassie (86).

VITRINELLIDAE

Two specimens of the drill hole Alliance 28 (44; Altena, 1969b: 178) and one of the "Coquette", Station 197 ( $6^{\circ}22.5' N$   $55^{\circ}10' W$ ), from tubes of *Diopatra cuprea* (Bosc), are young Vitrinellidae.

**Vitrinella (Striovitrinella) cupidinensis** Altena (fig. 7a-d)

Altena, 1966: 235, fig. 2a-d (Shell ridge near Cupido on the Maratakka, Nickerie District, Suriname).

Occurrence in Suriname

Shell ridges. — Cupido (4).

**Cochliolepis surinamensis** Altena (fig. 8a-d)

Altena, 1966: 236, fig. 3a-d (Shell ridge "Kerkplein", Paramaribo, Suriname).

Occurrence in Suriname

Shell ridges. — Kerkplein (25).

**Solariorbis guianensis** Altena (fig. 9a-c)

Altena, 1966: 238, fig. 4a-c (Shell ridge near Cupido on the Maratakka, Nickerie District, Suriname).

Occurrence in Suriname

Shell ridges. — Cupido (4).

**Cyclostremiscus caraboboensis** Weisbord (fig. 10a-c)

Weisbord, 1962: 140, pl. 13 figs. 7-9 (Pliocene, La Salina, west of Puerto Cabello, Carabobo, Venezuela).

Altena, 1966: 239, figs. 5a-c.

The two specimens washed ashore are worn.

Occurrence in Suriname

Shell ridges. — Cupido (4); Saramacca District, km 50 (14); Lust en Rust (29); Alliance (44).

Washed ashore. — Burnside (between 58 and 59); near Popogaimama Creek (65).

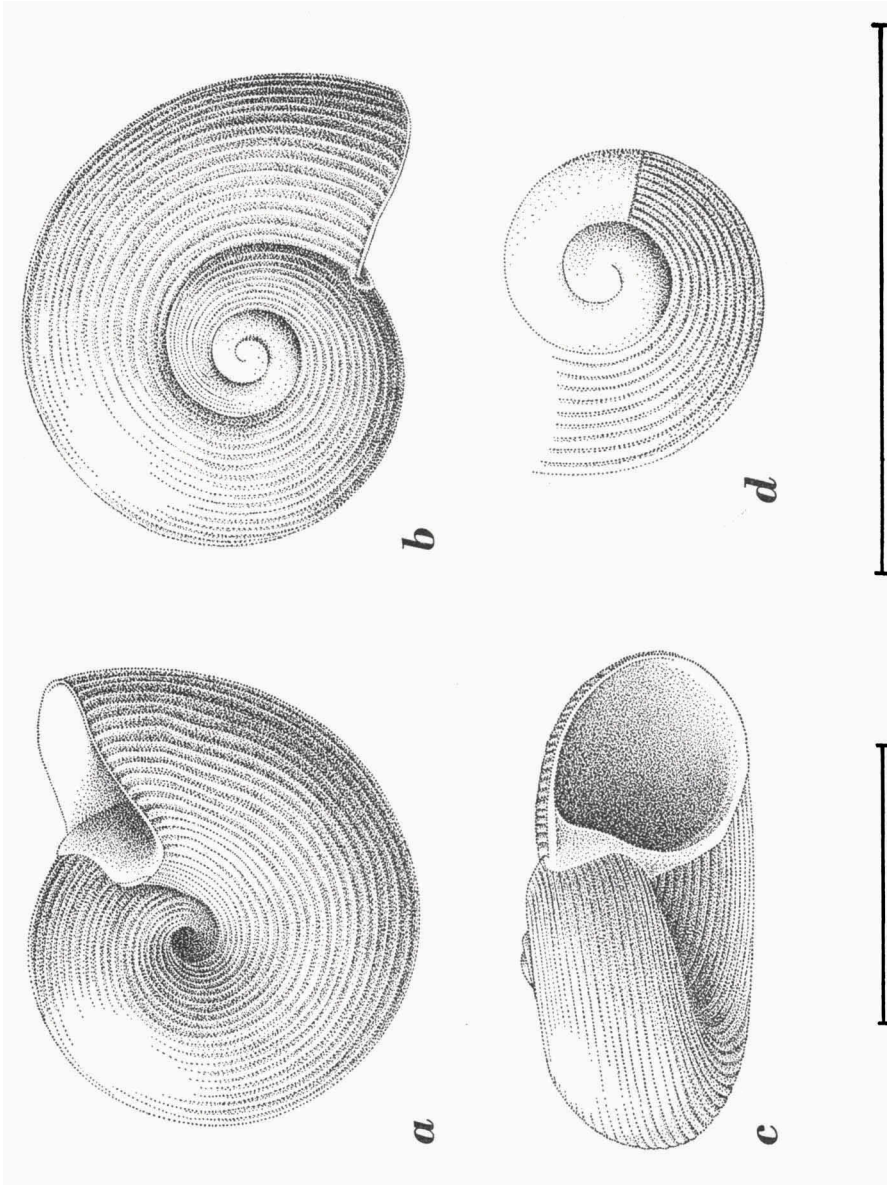


Fig. 7a-d. *Vitrimella* (*Striovitrimella*) *cupidinensis* Altana, holotype, shell ridge near Cupido on the Maratakka, Nickerie District, VII 1962, Dr. D. C. Geijskes coll.; scales 1 mm, left for a-c, right for d. Mr. W. Bergmans del.



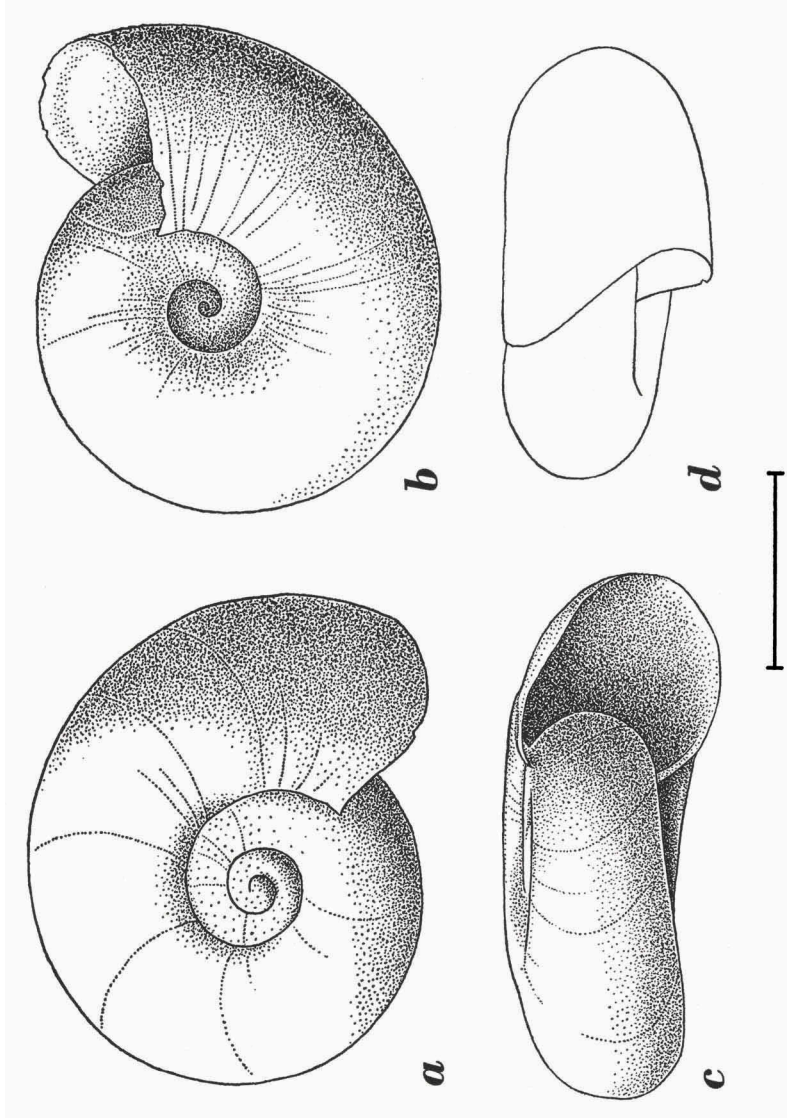


Fig. 8a-d. *Cochliolepis surinamensis* Altana, holotype, shell ridge at Kerkplein, Paramaribo, Suriname District, 26 X 1950, Dr. D. C. Geijskes coll.; scale 1 mm. Mr. W. Bergmans del.

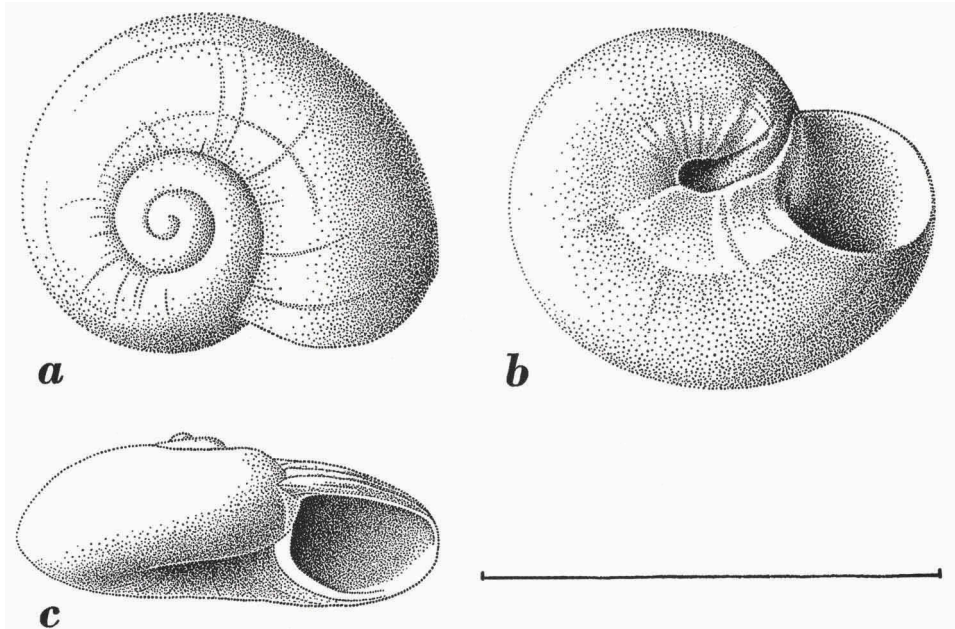


Fig. 9a-c. *Solariorbis guianensis* Altena, holotype, shell ridge near Cupido on the Marakakka, Nickerie District, 25 VII 1962, Dr. D. C. Geijskes coll.; scale 1 mm. Mr. W. Bergmans del.

**Teinostoma (Pseudorotella) schumoi** Vanatta (fig. 11a-c)

Vanatta, 1913: 25, pl. 2 figs. 5, 10 (Porto Barrios and Livingston, Guatemala).  
Altena, 1966: 240, fig. 6a-c.

Occurrence in Suriname

Shell ridges. — Cupido (4).

TURRITELLIDAE

**Turritella (Haustator) variegata** (L.) (pl. I fig. 10)

Linnaeus, 1758: 767 (*Turbo v.*, no locality).

Weisbord, 1962: 144, pl. 10 figs. 17-20 (with list of references).

Altena, 1969a: 11; 1971b: pl. 2 fig. 5.

This species is rare on the shell ridges and also rarely found washed ashore. The "Coquette" took one live specimen at Station B1 and five very fresh looking ones at Station 157.

Occurrence in Suriname

Shell ridges. — Cupido (4); Garnizoenspad, ca. km 25 (17); Tingiholo (22); Charlesburg (24).

Washed ashore. — Braamspunt (80); near Kat Creek (82).

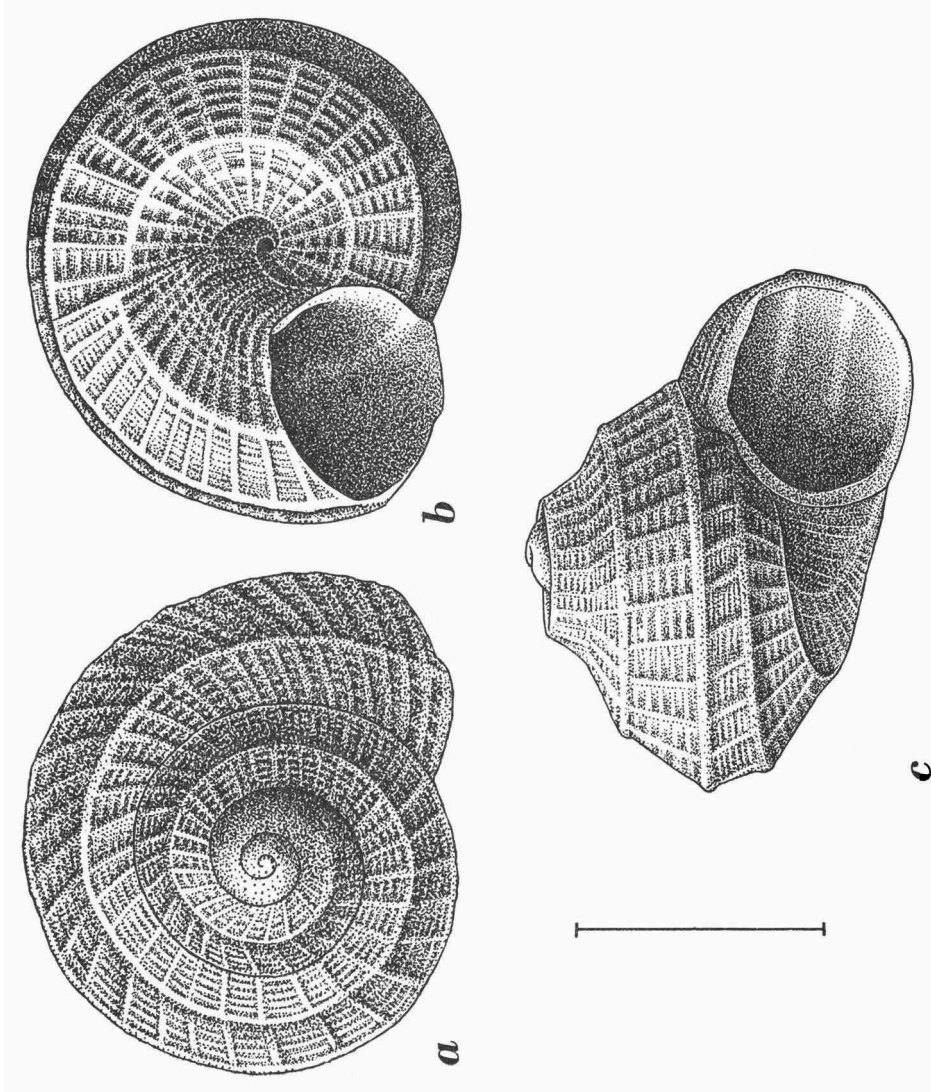


Fig. 10a-c. *Cyclostremiscus caraboboensis* Weisbord, shell ridge at km-pole 50 along the road in Saramacca District, XII 1948, Dr. D. C. Geijskes coll.; scale 1 mm. Mr. W. Bergmans del.



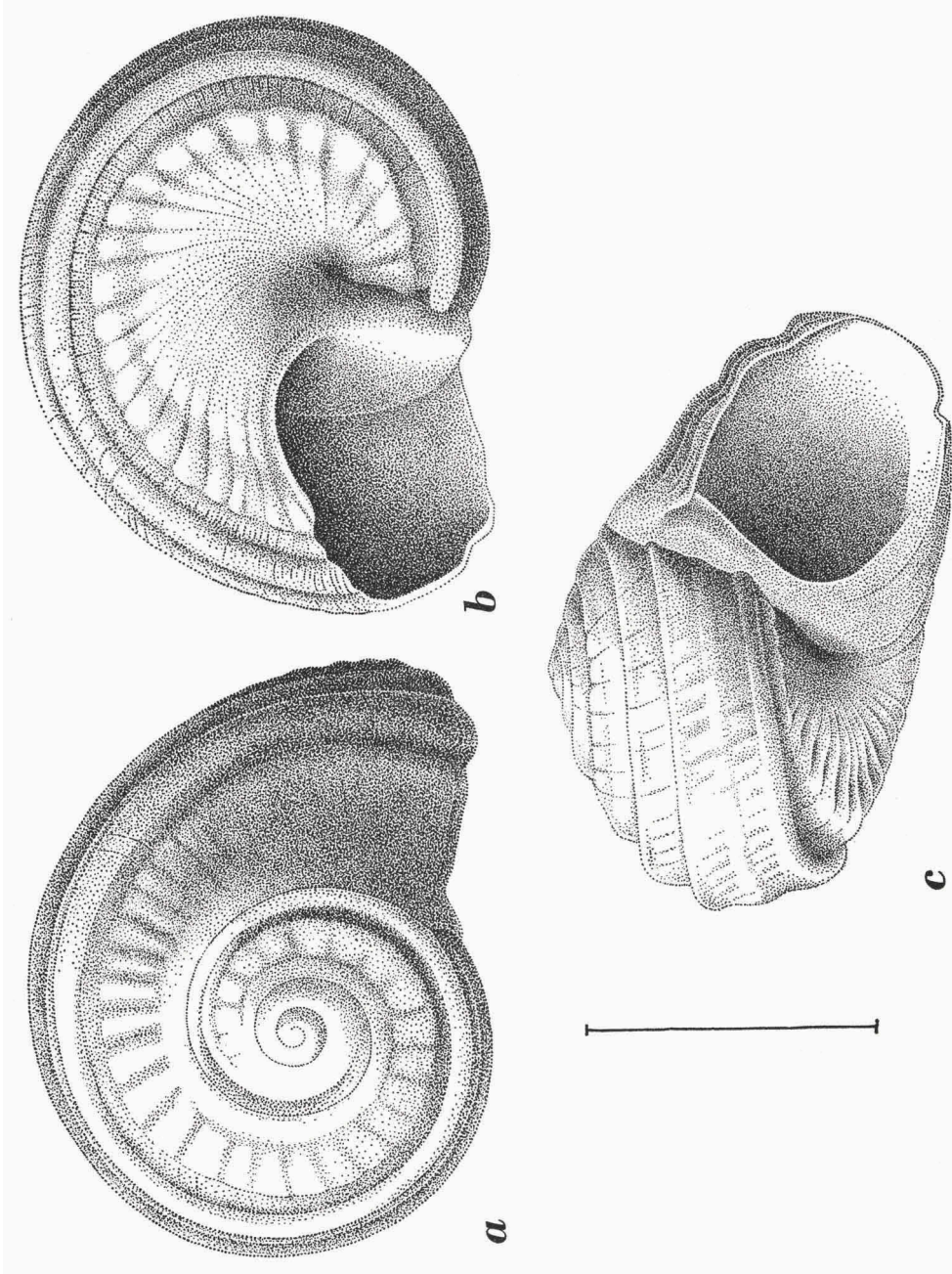


Fig. 11a-c. *Teinostoma (Pseudorotella) schumoi* Vanatta, shell ridge near Cupido on the Maratakka, Nickerie District, VII 1962, Dr. D. C. Geijskes coll.; scale 1 mm. Mr. W. Bergmans del.

Dredged off the coast. — Station A<sub>1</sub> (NNW Coppename), B<sub>1</sub> (NW of mouth Marowijne River), E<sub>2</sub> (NNW of Marowijne River, 30 miles off the coast), 157 (6°22' N 55°03.5' W), 309-360 (6°19'-6°55' N 55°13'-55°40' W), VRA 11a (off 30-45 miles E of lightship); (6-)8-20(-29) fms.

**Turritella (Torcula) exoleta** (L.)

Linnaeus, 1758: 766 (*Turbo e.*, in Europa australi).

Altena, 1969a: 31.

I have seen only specimens dredged by the "Coquette", of which those from Stations 28 and 29 were alive.

Occurrence in Suriname

Dredged off the coast. — Stations E<sub>3</sub> (NNW of Marowijne River, ca. 30 miles off the coast), 28 (6°48' N 54°54' W), 29 (6°49' N 54°54' W), 215 (6°41' N 54°17' W), 289 (6°52.5' N 55°53' W), 309-360 (6°19'-6°55' N 55°13'-55°40' W), "2", "11", "14" (all three off the Suriname coast); (14-)20-27(-29) fms.

ARCHITECTONICIDAE

**Heliacus bisulcatus** (Orbigny) (pl. 5 figs. 8-10)

Orbigny, 1841-1853, 2: 66 (*Solarium bisulcatum*, la Jamaïque et la Martinique, 1842); Atlas, pl. 19 figs. 17-20 (*Solarium bisulcatum*, 1842).

Occurrence in Suriname

Shell ridges. — Coronieweg, picket 216 (8); Sniphout (22).

Washed ashore. — Sea-dike beach, mouth Corantijn River and Nickerie River (52); Braamspunt (80).

**Architectonica nobilis** Roeding (pl. 5 figs. 11-13)

Röding, 1798: 78 (with reference to "Chemn. 5. t. 172. f. 1695. 1696", locality not mentioned, see Chemnitz, 1781: 126 „aus dem Spenglerischen Cabinette").

Durand, 1960: 34, 37 (*Solarium granulatum*).

Weisbord, 1962: 152, pl. 13 figs. 15, 16 (with list of references).

Altena, 1969a: 11, 43.

Only one badly worn specimen was found washed ashore, and some were dredged alive by the "Coquette" at Station B<sub>1</sub>, E<sub>2</sub> and 209.

Occurrence in Suriname

Washed ashore. — Near Matapica Canal (84).

Dredged off the coast. — Stations B<sub>1</sub> (NW of mouth Marowijne River), E<sub>2</sub> (NNW of Marowijne River, 30 miles off the coast), E<sub>3</sub> (NNW of Marowijne River, ca. 30 miles off the coast), 209 (6°41' N 54°33' W), 226

(6°55' N 54°10' W), 309-360 (6°19'-6°55' N 55°13'-55°40' W), "14" (off the Suriname coast); (14-)20-30 fms.

Occurrence in the other Guianas

Living (!) and dredged off the coast. — French Guiana (!, Durand).

#### CAECIDAE

### **Caecum regulare** Carpenter

Carpenter, 1858: 428 (W. Indies; Singapore; Australia. .... Mus. Brit. & c.).

Olsson & Harbison, 1953: 317, pl. 45 figs. 2, 2a, 2b, 2c.

Weisbord, 1962: 162, pl. 14 figs. 10, 11 (with list of references).

Occurrence in Suriname

Dredged off the coast. — Station E<sub>3</sub> (NNW of Marowijne River, ca. 30 miles off the coast), VRA 17 (N of lightship); 17-20 fms.

### **Caecum** spec.

Altena, 1969b: 178.

There is only the top of one shell from drill hole Alliance 28 and a worn specimen from Station VRA 5. Both are smooth, contrary to the preceding species.

Occurrence in Suriname

Drill holes. — Alliance 28 (44): 16.25 m below surface.

Dredged off the coast. — Station VRA 5 (off the Suriname coast); depth unknown.

#### CERITHIIDAE

### **Cerithium** cf. **eburneum** Bruguière

Bruguière, 1792a: 498 (l'Océan Américain, & principalement à l'isle de la Guadeloupe).

A fragment of 1¼ whorl probably belongs to this species, but is too incomplete to be identified with certainty.

Occurrence in Suriname

Shell ridges. — Coronieweg, km 106 (8).

#### TRIPHORIDAE

### **Triphora** spec.

The only specimen has three rows of beads on the last whorl, two on the preceding whorls, and the top is worn; the mouth has been broken off. Possibly the top of a larger specimen.

Occurrence in Suriname

Dredged off the coast. — Station VRA 17 (N of lightship); 17 fms.

## EPITONIIDAE

**Amaea (Amaea) mitchelli** (Dall) (pl. 1 fig. 11)

Dall, 1896: 112 (*Scala M.*, Matagorda Island on the Texas coast).

Clench & Turner, 1950b: 243, pl. 106 figs. 5-7.

My specimens agree with those in the USNM. A rare species on the shell ridges as well as washed ashore.

Occurrence in Suriname

Shell ridges. — Coronieweg, picket 216 (8); Saramacca District, km 50 (14); Munderweg (24); near Paramaribo (23-26?).

Washed ashore. — Sea-dike of Nieuw Nickerie (52), Nickerie, sea beach (54?); near Box Creek (57).

**Amaea (Scalina) retifera** (Dall)

Dall, 1889: 312 (*Scala r.*, 17-20 miles off the coast of N. Carolina).

Clench & Turner, 1950b: 243, pl. 106 figs. 1-4.

My specimen agrees with those in the USNM.

Occurrence in Suriname

Dredged off the coast. — Station F1 (N of Suriname River, 20 miles off the coast); 15 fms. or less.

**Epitonium (Epitonium) albidum** (Orbigny) (pl. 6 fig. 1)

Orbigny, 1841-1853, 2: 17 (*Scalaria albida*, Cuba, 1842); Atlas, pl. 11 figs. 24, 25 (*Scalaria*]. *albida*, 1842).

Clench & Turner, 1951: 260, pls. 113, 114.

? Altena, 1969b: 178 (Epitoniidae, gen. spec., partim).

Green & Hill, 1971: 22, pl. 1 fig. 4.

To Dr. R. D. Turner I owe the identification of several specimens. A great number of these have the angle of the spire exceeding 35°, one even more than 40°. The specimens with the largest spire angle come from the shell ridge near Cupido; some are too damaged to identify them with certainty.

Occurrence in Suriname

Drill holes. — ? Alliance 28 (44): 16.25 m below surface.

Shell ridges. — Cupido (4); ? ridge Saramacca, km 72½ (11); ? ridge Saramacca, km 50 (14).

Washed ashore. — Beach eastern bank of Nickerie River (54); ± 12 km NE of Nieuw Nickerie (near 57); near Popogaimama Creek (65); near Toeholi Creek (66); ? near Kat Creek (82); Krofajapassie to 9½ km E (86-87½); Bigisanti (88).

**Epitonium (Asperiscala) candeanum** (Orbigny) (pl. 6 figs. 2-4)

Orbigny, 1841-1853, 2: 20 (*Scalaria candeana*, le sable de la Jamaïque et de Saint-Thomas, 1842); Atlas: pl. 11 figs. 28-30 (*S[calaria]. candeana*, 1842).  
Clench & Turner, 1952: 301, pls. 140, 141.

For the identification of these specimens I am again indebted to Dr. R. D. Turner.

Occurrence in Suriname

Washed ashore. — Near Popogaimama Creek (65).

**Epitonium (Gyroscala) rupicolum** (Kurtz) (pl. 6 figs. 5, 6)

Kurtz, 1860: 7 (*Scalaria rupicola*, Fort Johnson, South Carolina) (non vidi).  
Clench & Turner, 1951: 284, pl. 130.

Only three specimens were found on the ridge near Cupido on the Maratukka.

Occurrence in Suriname

Shell ridges. — Cupido (4).

**Epitonium (Gyroscala) turnerae** Altena (fig. 12a, b)

Altena, 1971a: 80, textfig. 4a, b (Suriname, Krofajapassie to 9½ km E).  
Green & Hill, 1971: 23, pl. 1 fig. 5.

One specimen has been found on a shell ridge, the others washed ashore.

Occurrence in Suriname

Shell ridges. — Coronieweg, picket 216 (8).

Washed ashore. — ± 12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); near Popogaimama Creek (65); near Toeholi Creek (66); near Kat Creek (82); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88); Wiawia coast (89).

## EULIMIDAE

**Eulima bifasciata** Orbigny (pl. 6 fig. 7)

Orbigny, 1841-1853, 1: 216 (le sable de la Guadeloupe et de Saint-Thomas, 1842); Atlas: pl. 16 figs. 1-3 (1842).

The specimens are subfossil and the only one washed ashore is worn, so that the brown bands are no more to be seen. For the rest they agree with the figures of Orbigny.

Occurrence in Suriname

Shell ridges. — Van Drimmelpolder (2); Coronieweg, picket 216 and ridge 430b, washing water pit (8); Charlesburg (24); Gravenstraat, Noorderkerkstraat and Herenstraat (25).

Washed ashore. — Near mouth of Corantijn River (51).

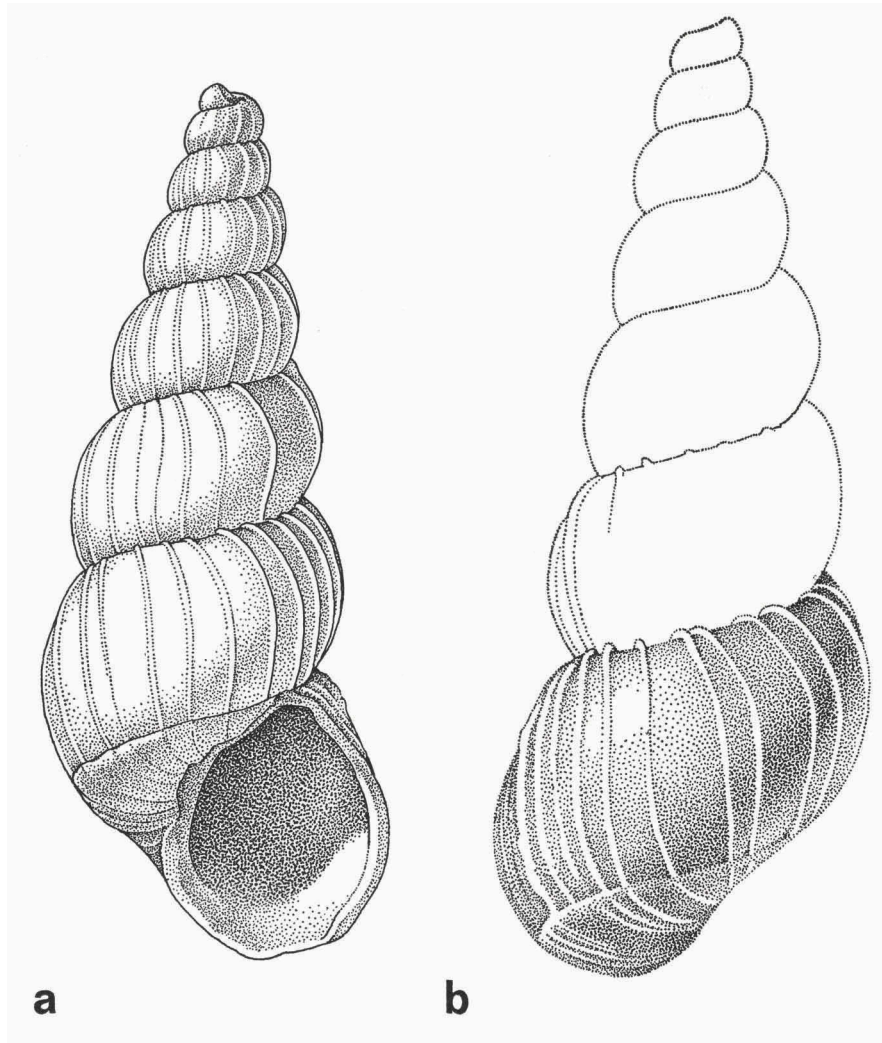


Fig. 12a-b. *Epitonium (Gyroscala) turncrac* Altena, holotype, beach at Krofajapassic to 9½ km E, border Commewijne and Marowijne District, Mr. D. J. Green & Mr. R. H. Hill coll.; height 9.8 mm. Mr. W. C. G. Gertenaar del.

***Niso interrupta* (Sowerby) (pl. 6 fig. 8)**

Sowerby, 1832-1841: *Eulima*, text sp. 3, fig. 11 (*Eulima i.*, Gulf of Nocoioyo, 1834); 1834b: 7 (*Eulima i.*, in America Centrali).

Bush, 1885a: 585 (*N. aegleës*, off Cape Hatteras); 1885b: 465, pl. 45 figs. 10, 10a (*N. aegleës*).

Dall, 1889: 330, pl. 18 figs. 5, 6 (*N. i.* var. *albida*).

Altena, 1969b: 178 (*N. i.*?).

Of the sixteen specimens washed ashore near Popogaimama Creek some are more or less worn. The more they are worn the more collateral ribs are to be seen, while the surface is quite smooth in living specimens. I think that all belong to one species and consider the only specimen from locality 64 also to belong here, although it has distinct collateral ribs. The well preserved specimens belong to the var. *aegleës* Bush. One specimen was found on the ridge near Alliance by P. A. Teunissen in 1972; until then we had only dubious material from a drill hole at this place.

Occurrence in Suriname

Drill holes. — ? Alliance 28 (44): 16.25 m below surface.

Shell ridges. — Van Drimmelpolder (2); ridge km 50½ (near 14); Saramacca, ridge km 46 (15); Alliance (44).

Washed ashore. — Camping site 11/12 VI 1959 (64); near Popogaimama Creek (65); near Kat Creek (82).

#### CAPULIDAE

##### **Capulus (Krebsia) intortus** (Lamarck)

? Gmelin, 1791: 3715 (*Patella incurva*, habitat?).

Lamarck, 1822a: 18 (*Pileopsis intorta*, no locality).

Delessert, 1841: pl. 25 fig. 1 (*Pileopsis intorta*).

Weisbord, 1962: 207, pl. 18 figs. 18-20, pl. 19 figs. 1, 2 (*Capulus incurvatus* [should be *incurvus*], with list of references).

The identity of "*Patella incurva*" is very uncertain, because Gmelin, who gave a very brief and incomplete description, cited Meuschen who did not figure or mention the spiral rows nor its habitat. Therefore I consider it a nomen dubium.

I have only one specimen which is 2.5 mm long and covered by a periostracum which has more than 20 spiral rows of long thin spines. It was alive when coming up in the dredge.

Occurrence in Suriname

Dredged off the coast. — Station VRA 18a (N of mouth of Coppename River) from a concretion; depth unknown.

#### CALYPTRAEIDAE

##### **Calyptrea centralis** (Conrad) (pl. 6 figs. 9, 10)

Conrad, 1841: 348 (*Infundibulum c.*, Medial Tertiary formation, Naturell Well, Duplin Co., Carolina).

Orbigny, 1841-1853: Atlas, pl. 24 figs. 26-29 (*Infundibulum Candeanum*, 1842); 2: 190 (*Infundibulum candeanum*, les sables de Saint-Dominique, de la Jamaïque, de Saint-Thomas et de la Martinique ..... dans ceux de Cuba, 1846).

Deslongchamps, 1859: 41, reprint: 24 (*C. lichen*).

IJzerman, 1931: 36 (*C. cf. mamillaris*).

Altana, 1969a: 12, 10.

The dredged specimens looked fresh but were apparently dead when collected.

Occurrence in Suriname

Drill holes. — Coronie 35 (41): 12.75-18.70 m below surface.

Shell ridges. — Coronieweg, km 117-118 (7); Coronieweg, ridge 430b, washing water pit (8); Groningen or environs (15, Deslongchamps); Munderweg and Charlesburgerweg (24).

Washed ashore. — Near mouth of Corantijn River (51); Coppename Point, little beach near "Rozenblad" (S of 62); near Matapica Canal (84).

Dredged off the coast. — Stations E3 (NNW of Marowijne River, ca. 30 miles off the coast), 197 (6°22.5' N 55°10' W) from tubes of *Diopatra cuprea* (Bosc), "2" (off the Suriname coast), VRA 17 (N of lightship); 11-23 fms.

#### **Crucibulum (Dispotea) striatum** (Say)

Say, 1826: 216 (*C[alyptraea]. striata*, non Gray (1825: 407); coast of New Jersey, about three miles north of Long Beach).

Altena, 1969a: 31.

The name *Calyptraea striata* Gray is a nomen dubium and I have asked, therefore, the International Commission on Zoological Nomenclature to use its plenary powers to suppress the name *striata* Gray both for the purposes of the Law of Priority and that of Homonymy.

Most specimens look fresh, those of Stations B1 and E2 were certainly alive when dredged.

Occurrence in Suriname

Dredged off the coast. — Stations B1 (NW of mouth Marowijne River, ca. 20 miles off the coast), E2 (NNW of Marowijne River, 30 miles off the coast) from *Architectonica nobilis* Roeding, 283 (6°47' N 55°40' W), "2", "6", "7", "14" (all four off the Suriname coast); 20-25 fms.

#### **Crepidula (Janacus) plana** Say

Say, 1822: 226 (Maryland, Carolina, Georgia and east Florida; New Jersey).

Orbigny, 1841-1853: Atlas, pl. 24 figs. 32, 33 (*Cr. protea*, partim, 1842).

The specimens look fresh and were mostly alive when coming up in the dredge.

Occurrence in Suriname

Dredged off the coast. — Stations 309-360 (6°19'-6°55' N 55°13'-55°40' W), "1", "6" (both off the Suriname coast), VRA 20 (ca. 5 miles NW of lightship); (2-)17-24(-29) fms. — VRA 5 (off the Suriname coast); depth unknown.



## NATICIDAE

**Polinices hepaticus** (Roeding) (pl. I fig. 12)

Röding, 1798: 21 (*Albula Hepatica*, with reference to "Chem. 5 tab. 189 fig. 1932.33", locality (Chemnitz, 1781: 283): von St Thomas aus Westindien).

Weisbord, 1962: 240, pl. 22 figs. 9, 10 (with list of references).

Of this species we have only worn specimens washed ashore in the neighbourhood of Nieuw Nickerie.

Occurrence in Suriname

Washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); beach eastern bank of Nickerie River (54).

**Lunatia marochiensis** (Gmelin) (pl. I fig. 13)

Gmelin, 1791: 3673 (*Nerita m.*, ad Africae, praesertim Marochii, Antillarum quoque litora).

Lamarck, 1822a: 203 (*Natica m.*).

Schomburgk, 1847: 107 (*Natica m.*).

Schepman, 1887: 155, 163 (*Natica maroccana*).

IJzerman, 1931: 36, 48 (*Natica m.*).

Audretsch, 1953: 239, 241 (*Natica m.*).

Graham, 1955: pl. 2 fig. 9 (*Natica maroccana*).

Durand, 1960: (*Natica marochiensis* [sic]).

Altena, 1969a: 19, 20, 21, 30, 33, 43, 44 (*Natica m.*).

Green & Hill, 1971: 24, figs. 7, 7 (*Natica m.*).

This is a common species on the shell ridges and at the beach. On 22 October 1970 Mr. A. L. Spaans found a living specimen some hundred meters off the coast, ca. 5 km W. of Oranje Creek, which is near Bigisanti. The "Coquette" dredged one dead specimen (with two *Crassostrea*'s in the aperture) at Station A2, and one alive at Station 184.

Occurrence in Suriname

Drill holes. — Near Nickerie, 12.00-27.00 m under surface (IJzerman); Livorno, 10.00 m and/or Zorg en Hoop, 24.00-28.50 m and/or Nieuw Amsterdam, 16.50 m under surface; Zorg en Hoop 36 m under surface (Audretsch).

Shell ridges. — Stalweide (1); clay dug from a canal near Hertenrits (3); Cupido (4); Indjikondre, km 134 (6); Post Groningen (15, Schepman); Jodenkerkhof (23, Schepman); Blauwgrond (26); Anna Catharina (34, Schepman).

Washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); beach eastern bank Nickerie River (54); ± 12 km NE of Nieuw Nickerie (near 57); Coronie beach (no exact locality); Burnside (between 58 and 59); Totness (59); Hermina flat (63); camping site 11/12 VI 1959 (64); near Popogaimama Creek (65); Toniholo (67); end

of Fernandez road (69); Plantation Resolutie (78); Braamspunt (80); near Kat Creek (82); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88); Wiawia coast (89); Galibi (93).

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), 184 (6°21' N 54°59' W); 12-15 fms.

Occurrence in the other Guianas

Washed ashore. — Guyana, at the mouth of the Wiani River (Schomburgk); Guyana (Graham); Georgetown, Guyana (RNHL); les côtes de la Guyane (Lamarck).

Dredged off the coast. — French Guiana (Durand).

### **Sinum perspectivum** (Say)

Say, 1830-1834: pl. 25 upper and lower figures and text (*Sigaretus perspectivus*, coast of New Jersey, IX 1830 [1831, fide Sherborn]).

I have only two specimens, both dredged by the "Coquette". The one from Station C2 was alive, the other from Station 197 was dead. The latter is young, only 5.5 mm, and has an umbilicus, but for the rest it agrees with this species.

Occurrence in Suriname

Dredged off the coast. — Stations C2 (N of Coppename-Nickerie), 197 (6°22.5' N 55°10' W) from tubes of *Diopatra cuprea* (Bosc); 11-15 fms.

### **Natica (Naticarius) canrena** (L.) (pl. 2 figs. 1, 2)

Linnaeus, 1758: 776 (*Nerita c.*, in O. Aiiæ [recte: Asiae]).

Weisbord, 1962: 244, pl. 23 figs. 1, 2 (with list of references).

Dredged at Station E2 and several specimens at Station VRA 17.

Occurrence in Suriname

Dredged off the coast. — Stations E2 (NNW of Marowijne River, 30 miles off the coast), VRA (N of lightship); 17-20 fms.

### **Natica (Naticarius) cayennensis** Recluz (pl. 2 figs. 3, 4)

Recluz, 1850: 383, pl. 14 fig. 6 (Cayenne).

Schepman, 1887: 154, 163 (*N. pennata*).

IJzerman, 1931: 36 (*N. canrena*).

Audretsch, 1953: 239 (*N. canrena*).

Altena, 1969a: 19, 20, 21, 33, 43.

Green & Hill, 1971: 24, pl. 1 figs. 6, 6.

This is a fairly common species on the shell ridges as well as washed ashore. The "Coquette" dredged it mostly at moderate depths; many were inhabited by pagurids, but the specimens from Stations E3 and 184 were alive. The shells mentioned by IJzerman and Audretsch certainly belong to this species.

Occurrence in Suriname

Drill holes. — Livorno, 10.00 m and/or Zorg en Hoop, 24.00-28.50 m and/or Nieuw Amsterdam, 16.50 m under surface (Audretsch).

Shell ridges. — Nickerie (Schepman); Stalweide (1); clay dug from a canal near Hertenrits (3); Cupido (4); Coronie (Schepman); Indjikondre, km 134 (6); Bethania 228 (north of 14); Post Groningen (15, Schepman); Kwattaweg, km 20 (between 17 and 18); Jodenkerkhof (23, Schepman); Munderweg and Charlesburgerweg (24); Blauwgrond (26); Anna Catharina (34, Schepman).

Washed ashore. — Near mouth of Corantijn river (51); sea-dike of Nieuw Nickerie (52); beach eastern bank Nickerie River (54); Totness (59); Toniholo (67); wreck of Goslar, inhabited by a pagurid (near 73); Plantation Resolutie (78); Braamspunt (80); Krofajapassie to 9½ km E (86-87½); Bigisanti (88); Galibi (93).

Dredged off the coast. — Stations A1 (NNW Coppename) only an operculum, A3 (ca. 20 miles NNW of Coppename), E3 (NNW of Marowijne River, ca. 30 miles off the coast), E4 (near lightship), E5 (15 miles N of lightship), E6 (N of Suriname River, 20 miles off the coast), F1 (N of Suriname River, 20 miles off the coast), 184 (6°21' N 54°59' W); 4-17 (-20) fms.

Occurrence in the other Guianas

Washed ashore. — Georgetown, Guyana (RNHL).

Washed ashore or dredged off the coast. — Cayenne (Recluz).

### ***Natica (Tectonica) pusilla* Say (fig. 13)**

Say, 1822: 257 (Inhabits the southern coast [of North America]).

Altena, 1969b: 178 (Naticidae, gen. spec.).

Three lots of *N. pusilla* were received on loan through the courtesy of Mrs. Morgan C. Rulan, of the Academy of Natural Sciences at Philadelphia. My specimens are constantly smaller than the largest specimens from Florida and they have a closed umbilicus already at a very early stage. They are somewhat worn and have no operculum. For the rest they agree with full-grown specimens from Florida, but their identification must remain doubtful as long as no living specimens have been studied.

Occurrence in Suriname

Drill holes. — Coronie 35 (41): 12.75-18.70 m below surface; Alliance 28 (44): 15.00 and 16.25 m below surface.

Shell ridges. — Munderweg (24).

Washed ashore. — Near mouth of Corantijn River (51); Totness (59).

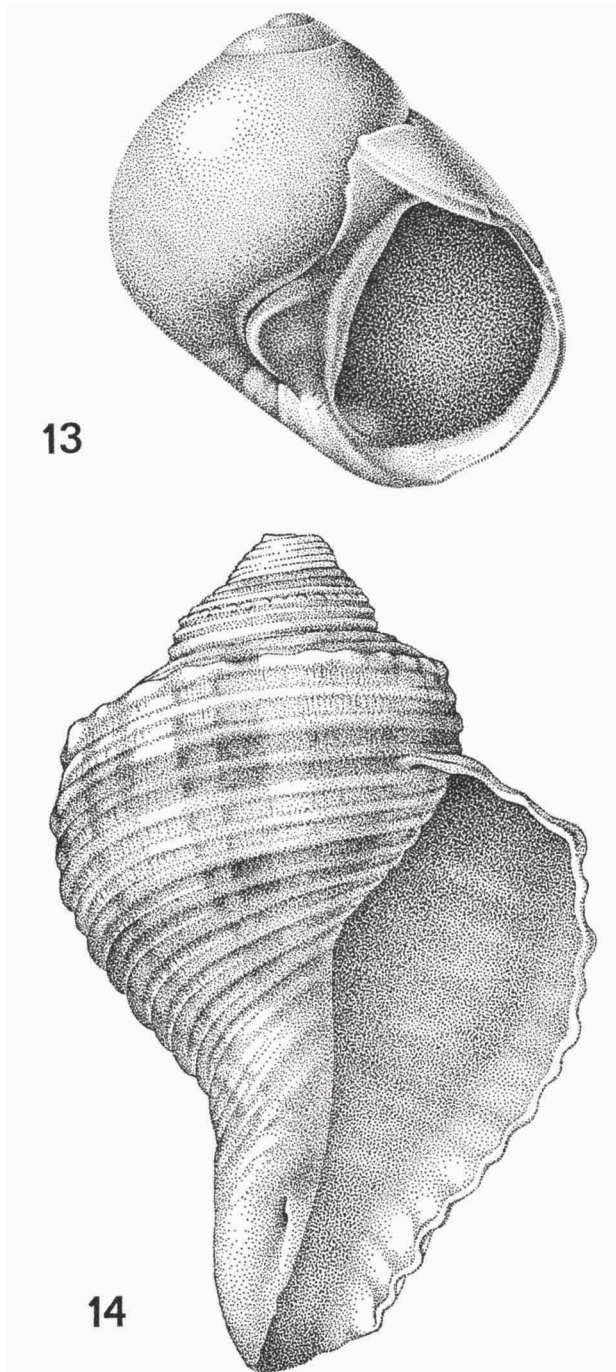


Fig. 13. *Natica (Tectonatica) pusilla* Say, shell ridge Munderweg, Paramaribo, Suriname District, 1956, Dr. W. A. Collier coll.; height 4.6 mm. Mr. W. C. G. Gertenaar del.  
 Fig. 14. *Cymatium (Linatella) poulsenii* (Mörch), beach at Krofajapassie to 9½ km E, border Commewijne and Marowijne District, 1969, Mr. D. J. Green & Mr. R. H. Hill coll.; height 26.8 + ? mm. Mr. W. C. G. Gertenaar del.

## CYPRAEIDAE

**Cypraea (Trona) zebra** L.

Linnaeus, 1758: 719 (no locality).

Schilder & Schilder, 1938-1939: 179 (*Trona z. z.*, 1938).

Altena, 1969a: 15.

The specimen from Station B1 is 84 mm long and 48 mm broad; it has no black spots within any of the white spots. The specimen from Station A2 is 87 mm long; its breadth can not be measured accurately because it is partly overgrown with barnacles. Some of its white spots have clearly a black spot in the centre. I would have mentioned this specimen as *C. cervus* L., if it had been longer and not been found so far away from the area of distribution known for that species. Moreover, there is a typical *C. zebra* from Station B1.

## Occurrence in Suriname

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), B1 (NW of mouth Marowijne River, 30 miles off the coast); 15-20 fms.

## AMPHIPERATIDAE

**Simnia (Neosimnia) intermedia** (Sowerby)

Sowerby, 1828: 158 (*Ovulum intermedium*, no locality); 1830: 9, figs. 32, 33 (*Ovulum intermedium*).

One very fresh (living?) specimen was dredged by the "Coquette"; it is adult and 26.5 mm long.

## Occurrence in Suriname

Dredged off the coast. — Station E2 (NNW of Marowijne River, 30 miles off the coast); 20 fms.

## CASSIDAE

**Phalium (Tylocassis) granulatum granulatum** (Born)

Born, 1778: 239 (*Buccinum gr.*); 1780: 248 (*Buccinum gr.*, "in mari mediterraneo, Davila; ad Amboinum, Rumph.").

Clench, 1944: 6, pl. 1 figs. 3-7, pl. 3 figs. 1-4 (*Ph. gr.*).

Weisbord, 1962: 254, pl. 23 figs. 15-18 (*Semicassis granulata*, with list of references).

Abbott, 1968: 157 (= 12-651), pl. 12 figs. 1-7, pl. 143-147.

Green & Hill, 1971: 26, pl. 1 fig. 8, pl. 4 figs. 26, 26 (*Ph. gr.*).

This species is very rarely washed ashore; the "Coquette" dredged some specimens of which two were probably alive.

## Occurrence in Suriname

Washed ashore. — Krofajapassie to 9½ km E (86-87½).

Dredged off the coast. — Stations B1 (NW of mouth Marowijne River, ca. 20 miles off the coast), D1 (NE of lightship), E2 (NNW of Marowijne River, 30 miles off the coast), 277 (6°42.5' N 55°31.5' W); 20-28 fms.

## CYMATIIDAE

**Cymatium (Linatella) poulsenii** (Mörch) (fig. 14)

Mörch, 1877: 33 (*Triton P.*, Curaçao, Portocabello).

Clench & Turner, 1957: 108, pl. 111 figs. 7, 8, pl. 113 fig. 2, pl. 115.

Green & Hill, 1971: 27, pl. 2 fig. 13 (*C. poulsenii*).

This is a very rare shell washed ashore.

Occurrence in Suriname

Washed ashore. — Krofajapassie to 9½ km E (86-87½).

**Cymatium (Ranularia) caribbaeum** Clench & Turner (pl. 2 fig. 5)

Bayer, 1933: 49 (*C. cynocephalum*).

Clench & Turner, 1957: 204, pl. 111 figs. 3, 4, pl. 113 fig. 3, pl. 117 (Bahia, Brazil).

One specimen washed ashore collected by Mr. W. C. van Heurn, and one young specimen of somewhat doubtful status, received from Mr. Schimmelpenninck van der Oye. The "Coquette" dredged one, not fullgrown, specimen.

Occurrence in Suriname

Washed ashore. — Braamspunt (80).

Dredged off the coast. — Station 306 (6°54' N 56°14' W); 27 fms.

**Cymatium (Septa) krebsii** (Mörch)

Mörch, 1877: 30 (*Triton Kr.*, St. Thomas floating dock, St. Croix).

Clench & Turner, 1957: 220, pl. 112 figs. 3, 4, pl. 124.

Weisbord, 1962: 260, pl. 25 figs. 1-4 (with list of references).

Altena, 1969a: 31 (*C. gemmatum*).

Being in doubt about my previous identification of *C. gemmatum*, I sent my specimens to Dr. K. J. Boss who kindly renamed them. They agree with the description of Clench & Turner, except that most of my specimens are about 20 mm; the largest one measures 34 mm.

Occurrence in Suriname

Dredged off the coast. — Stations E3 (NNW of Marowijne River, ca. 30 miles off the coast), 277 (6°42.5' N 55°31.5' W), 283 (6°47' N 55°40' W), 286 (6°51' N 55°49' W), 309-360 (6°19'-6°55' N 55°13'-55°40' W), "1", "2", "7", "14" (all four off the Suriname coast); (2-)20-26(-29) fms.

**Cymatium (Septa) pileare** (L.)

Linnaeus, 1758: 749 (*Murex P.*, in *M. Mediterraneo*).

Clench & Turner, 1957: 216, pl. 112 figs. 1, 2, pl. 113 fig. 7, pl. 122, pl. 123.

Weisbord, 1962: 257, pl. 24 figs. 9-12 (*C. p. martinianum*, with list of references).

The only Suriname record of this species is the one by Clench & Turner who stated that H. G. Kugler found it at the Corantijn River.

Occurrence in Suriname

Washed ashore or dredged. — Corantijn River (Clench & Turner).

**Cymatium (Monoplex) parthenopeum** (Salis)

Salis, 1793: 370, pl. 7 fig. 4 ([*Murex*] *Parthenopeus*, in der Bucht von Neapel).  
 Clench & Turner, 1957: 228, pl. 110 fig. 4, pl. 112 figs. 7, 8, pl. 113 figs. 9, 10, pl. 128.  
 Weisbord, 1962: 262, pl. 25 figs. 5, 6 (with list of references).

The specimen from Station A1 is only 35 mm high, brittle, and the identification is not quite sure. It was probably dredged alive, as it looks fresh and has the periostracum unimpaired. The other one, from Station E2, is adult, 72 mm high, while the embryonic whorls are lacking.

Occurrence in Suriname

Dredged off the coast. — Stations A1 (NNW Coppename), E2 (NNW of Marowijne River, 30 miles off the coast); (8-)20 fms.

**Cymatium (Cymatium) femorale** (L.)

Linnaeus, 1758: 749 (*Murex F.*, in O. Asiatico).  
 Clench & Turner, 1957: 232, pl. 110 fig. 1, pl. 112 figs. 9, 10, pl. 113 fig. 11, pl. 129.

The three specimens dredged at Station VRA 18 are dead, but in one are rests of the animal.

Occurrence in Suriname

Dredged off the coast. — Station VRA 18 (N of lightship to N of Coppename); (25-30) fms.

**Distorsio (Rhysema) clathrata** (Lamarck) (pl. 2 figs. 6, 7)

(Lamarck), 1816: pl. 413 figs. 4a, 4b.  
 Lamarck, 1822b: 186 (*Triton clathratum*, les mers de l'Amérique méridionale).  
 Clench & Turner, 1957: 236, pl. 131, pl. 132 figs. 2-8, pl. 133.  
 Weisbord, 1962: 267, pl. 25 figs. 12-16 (with list of references).  
 Altena, 1969a: 31.

My specimens are small, the largest being 39 mm high, but for the rest they agree with Clench & Turner's description. One badly worn specimen was washed ashore. Those dredged by the "Coquette" were alive or very fresh.

Occurrence in Suriname

Washed ashore. — Near mouth of Corantijn River (51).

Dredged off the coast. — Stations A1 (NNW Coppename), B1 (NW of mouth Marowijne River), E2 (NNW of Marowijne River, 30 miles off the coast), E6 (N of Suriname River, 20 miles off the coast), 209 (6°41' N 54°33' W), 211 (6°44' N 54°31' W), 215 (6°41' N 54°17' W), 216 (6°41.5' N 54°16' W), 250-256 (6°41' N 55°26.5'-55°43' W), 277 (6°42.5' N 55°31.5' W), 280 (6°45' N 55°35' W), 283 (6°47' N 55°40' W), 286 (6°51' N 55°49' W), 289 (6°52.5' N 55°53' W), 309-360 (6°19'-6°55' N 55°13'-55°40' W), "1", "2", "6", "7", "14" (all five off the Suriname coast); (2-)15-27(-29) fms.

**Charonia tritonis variegata** (Lamarck)

(Lamarck), 1816: pl. 421 figs. 2a, 2b.

Lamarck, 1822b: 178 (*Triton variegatum*, les mers de l'Asie).

Clench & Turner, 1957: 193, pl. 111 figs. 1, 2, pl. 113 fig. 1, pl. 114 figs. 1, 2 (*Ch. variegata*).

Beu, 1970: 209, pl. 2 figs. 5, 7.

Of my two specimens, which were dead when dredged, the shoulder of the body whorl is not pronounced.

Occurrence in Suriname

Dredged off the coast. — Station VRA 18 (N of lightship to N of Coppename); (25-30) fms.

**Colubraria lanceolata** (Menke)

Menke, 1828: 87 (*Ranella l.*) (non vidi); 1830: 67 (*Ranella l.*), "541" [= 145] (*Ranella l.*, ad Porto-rico; etiam e Spongia officinali venali teneo).

There is only one specimen dredged by the "Coquette"; it is small, height: 15.5 mm, and has about 7½ whorls. It matches specimens in the USNM from two localities, but these are slightly higher (18.5-22 mm).

Occurrence in Suriname

Dredged off the coast. — E3 (NNW of Marowijne River, ca. 30 miles off the coast); 20 fms. or less.

## BURSIDAE

**Bursa spadicea** (Montfort) (pl. 6 figs. 8, 9)

Montfort, 1810: 575, pl. 144 (*Buffo spadiceus*, la Nouvelle Hollande).

Schepman, 1887: 154, 163 (*Ranella crassa*).

IJzerman, 1931: 36 (*B. crassa*).

Bayer, 1932: 225.

Durand, 1960: 34, 37, fig. 16 (*B. spadicea* = *B. crassa*).

Altena, 1969a: 19, 20, 43.

Green & Hill, 1971: 28, pl. 2 fig. 12.

The specimens found near the Marowijne (Schepman, 1887) probably do not originate from a shell ridge. At the beach more or less worn shells occurred, often inhabited by hermit crabs. The "Coquette" dredged many living and very fresh looking specimens.

Occurrence in Suriname

Shell ridges. — Stalweide (1); Indjikondre (6); Jodenkerkhof (23, Schepman); Munderweg (24); Anna Catherina (34, Schepman); near the Marowijne River (? Schepman).

Washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); Coronie beach (no exact locality); Totness (59); Hermina flat (63); near Popogaimama Creek (65); Toniholo (67); Plantation Resolutie (78); Braamspunt (80); near Kat Creek (82); near Mata-



pica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88); Lubin Bank (91); Galibi (93).

Dredged off the coast. — Stations A<sub>1</sub> (NNW Coppename), B<sub>1</sub> (NW of mouth Marowijne River), D<sub>1</sub> (NE of lightship), E<sub>1</sub> (off coast of Marowijne District), E<sub>2</sub> (NNW of Marowijne River, 30 miles off the coast), E<sub>3</sub> (NNW of Marowijne River, ca. 30 miles off the coast), E<sub>6</sub> (N of Suriname River, 20 miles off the coast), 2 (6°23' N 55°05.5' W), 23 (6°24' N 54°59.5' W), 28 (6°48' N 54°54' W), 29 (6°49' N 54°54' W), 157 (6°22' N 55°03.5' W), 184 (6°21' N 54°59' W), 211 (6°44' N 54°31' W), 250-256 (6°41' N 55°26.5'-55°43' W), "1", "6", "7", "8", "14" (all five off the Suriname coast, VRA 11a (off 30-45 miles E of lightship); (2-)8-26 (-31) fms.

Occurrence in the other Guianas

Dredged off the coast. — French Guiana (Durand).

#### TONNIDAE

#### *Tonna galea* (L.) (pl. 6 fig. 10)

Linnaeus, 1758: 734 (*Buccinum G.*, in *M. Mediterraneo*).

Schomburgk, 1847: 107 (*Dolium fasciatum*).

Schepman, 1887: 154, 163 (*Dolium Antillarum*).

Bayer, 1937: 41 (*Dolium g.* var. *antillarum*).

Turner, 1948: 173, pl. 75 fig. 4, pl. 78 figs. 1, 2.

Graham, 1955: pl. 2 fig. 13.

Durand, 1960: 34, 36, 38, fig. 17 (*Dolium g.*).

Weisbord, 1962: 274, pl. 24 figs. 3, 4 (with doubt, but with list of references).

Altana, 1969a: 19, 43, 44.

Green & Hill, 1971: 29, pl. 2 figs. 14, 14.

Though their localities are situated to the east of Colombia, which is the easternmost locality which R. D. Turner indicates for the typical subspecies, my specimens belong to that subspecies and not to *T. galea brasiliiana* Mörch, recorded by Turner from different localities in Brazil. More or less fresh-looking shells, sometimes only fragments, are washed ashore. Also the specimen found by Mr. W. C. van Heurn and labelled "Suriname", looks as if it was washed ashore and does not originate from a shell ridge. The "Coquette" dredged mostly living or fresh-looking specimens.

Occurrence in Suriname

Shell ridges. — Post Groningen (15, Schepman).

Washed ashore. — Near mouth of Corantijn River (51); beach eastern bank Nickerie River (54); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88).

Dredged off the coast. — Station A<sub>1</sub> (off Coronie District), E<sub>2</sub> (NNW of Marowijne River, 30 miles off the coast), E<sub>3</sub> (NNW of Marowijne River,

ca. 30 miles off the coast), 250-256 ( $6^{\circ}41' N$   $55^{\circ}26.5'-55^{\circ}43' W$ ), "14" (off the Suriname coast), VRA 11 (off 3 miles E to 6 miles W of lightship), VRA 18 (N of lightship to N of Coppename), VRA 62 (off 10-12 miles NW of lightship, end of mud zone); (8-)13-25(-30) fms.

Occurrence in the other Guianas

Washed ashore. — Guyana, at the mouth of the Wiani River (Schomburgk); Guyana (Graham).

Dredged off the coast. — French Guiana (Durand).

### **Tonna pennata** (Mörch)

Dillwyn, 1817: 583 ("*Buccinum perdix* var. *B. maculosum*. Solander's M. S. S. Portland Cat. p. 136 [recte 137]. lot 3050.", non Gmelin).

Mörch, 1852: 110 (*Dolium pennatum*, Mart. 3. f. 1078, Antill.).

Bayer, 1937: 45 (*Dolium perdix* subsp. *pennata*).

Weisbord, 1962: 275, pl. 24 figs. 5, 6 (*T. maculata*, with list of references).

There is one specimen, collected by Mr. W. C. van Heurn and labelled "Paramaribo". I doubt whether the label is correct, but if so it was probably washed ashore.

Occurrence in Suriname

Washed ashore. — "Paramaribo" (Van Heurn).

## Ordo Neogastropoda

### MURICIDAE

### **Murex (Murex) chrysostoma** Sowerby (pl. 3 fig. 1)

Sowerby, 1832-1841: *Murex*, text sp. 8, fig. 1 (no locality, 1834).

Clench & Pérez Farfante, 1945: 10, pl. 5 figs. 1, 2.

Of some specimens the identification was confirmed by Dr. G. E. Radwin. From Braamspunt we got some fairly fresh specimens and the Matapica Canal yielded one very worn shell of which the identification is dubious. It is, consequently, a rare shell in Suriname.

Occurrence in Suriname

Shell ridges. — Charlesburg (? , small fragment, 24); Ornamibo near Domburg (probably imported and recent).

Washed ashore. — Braamspunt (80); Matapica Canal (84).

### **Murex (Murex) messorius** Sowerby

Sowerby, 1832-1841: *Murex*, text sp. 9, fig. 93 (1841); 1841: 137 (no locality).

Clench & Pérez Farfante, 1945: 6, pl. 3 figs. 1-7 (*M. recurvirostris rubidus*).

? Durand, 1960: 34 (*M. cabriti*).

Bullis, 1964: 103.

Vokes, 1967: 81, pls. 1, 2.

? Altana, 1969a: 43 (*M. donmoorei*).

Some of the specimens were identified by Dr. G. E. Radwin, which enabled me to name the rest by examining the form of the protoconch and the spiral bands on the first post-nuclear whorl. The protoconch has about one and a half smooth whorls. This character I overlooked in 1969 and so both were named *M. donmoorei*. Part of the specimens look very fresh; these probably have been dredged alive.

Bullis recorded the species already from seven localities at the Suriname coast, at 17-31 fathoms depth.

#### Occurrence in Suriname

Dredged off the coast. — Stations E<sub>3</sub> (NNW of Marowijne River, ca. 30 miles off the coast), 2 (6°23' N 55°05.5' W), 277 (6°42.5' N 55°31.5' W), "1", "2", "6", "7", "8" (all five off the Suriname coast); (2-)15-24 fms.

#### Occurrence in the other Guianas

Dredged off the coast. — Two localities off Guyana, 23-41(-44) fms. (Bullis); ? French Guiana (Durand).

### **Murex (Murex) donmoorei** Bullis

? Durand, 1960: 34 (*M. cabriti*).

Bullis, 1964: 101, figs. 1, 2 (45 miles N of St. Andrews Point, British Guiana).

? Altena, 1969a: 43.

Some specimens were identified by Dr. G. E. Radwin, the rest later by myself, mainly by examining the protoconch. This has two whorls of which the last three quarters have a sharp keel ending in a conspicuous, smooth varix. Some specimens were probably dredged alive.

Bullis recorded the species already from six localities off the Suriname coast, at 17 to 29 fathoms depth.

#### Occurrence in Suriname

Dredged off the coast. — Stations A<sub>2</sub> (NNW Coppename, 20 miles off the coast), 283 (6°47' N 55°40' W), 289 (6°52.5' N 55°53' W), "6", "8", "11" (all three off the Suriname coast); 15-27 fms.

#### Occurrence in the other Guianas

Dredged off the coast. — Three localities off Guyana, (20-)22-25 fms. (Bullis); ? French Guiana (Durand); three localities off French Guiana, 34 fms. (Bullis).

### **Murex (Siratus) thompsoni** Bullis

Sowerby, 1832-1841: *Murex*, text no. 18, fig. 69 (*M. motacilla* var., 1841).

Reeve, 1845-1849: in text of fig. 88 with reference to Sowerby's Conchological Illustrations (*M. articulatus* [non F. S. Voigt in Cuvier, 1834, Thierreich, 3: 385], 1845).

Bullis, 1964: 103, figs. 3, 4 (75 miles NNE of Pte. Mana, French Guiana).

This is a fairly common shell dredged at 13-27 fathoms depth; the specimens were alive or looked fresh and were frequently inhabited by hermit crabs.

Bullis recorded the species already from four localities off the Suriname coast, at 23 to 31 fathoms depth.

Occurrence in Suriname

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), E3 (NNW of Marowijne River, ca. 30 miles off the coast), E6 (N of Suriname River, 20 miles off the coast), 206 (6°22' N 55°01' W), 216 (6°41.5' N 54°16' W), 283 (6°47' N 55°40' W), 286 (6°51' N 55°49' W), 289 (6°52.5' N 55°53' W), "2", "11", "14" (all three off the Suriname coast), VRA 11 (off 3 miles E to 6 miles W of lightship); 13-27 fms.

Occurrence in the other Guianas

Dredged off the coast. — Two localities off Guyana, (41-)44-46(-48) fms. (Bullis); two localities off French Guiana, 34 fms. (Bullis).

**Murex (Phyllonotus) pomum** Gmelin (pl. 2 fig. 11)

Gmelin, 1791: 3527 (in mari, Africam occidentalem, alluente).

Clench & Pérez Farfante, 1945: 26, pl. 14 figs. 1-3.

Bullis, 1964: 105.

Green & Hill, 1971: 30, pl. 2 figs. 11, 11.

Has been found washed ashore only by D. J. Green & R. H. Hill. The "Coquette" dredged several specimens, alive or apparently fresh.

Bullis mentioned this species from six localities off the Suriname coast, at 23 to 75(-80) fathoms depth.

Occurrence in Suriname

Washed ashore. — Krofajapassie to 9½ km E (86-87½).

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), E3 (NNW of Marowijne River, ca. 30 miles off the coast), 309-360 (6°19'-6°55' N 55°13'-55°40' W), "1", "7" (both off the Suriname coast), VRA 4 (N of lightship); (2-)15-30 fms. — VRA 5 (off the Suriname coast); depth unknown.

Occurrence in the other Guianas

Dredged off the coast. — One locality off Guyana, (41-44) fms. (Bullis); two localities off French Guiana, 31-34 fms. (Bullis).

**Murex (Chicoreus) brevifrons** Lamarck (pl. 3 fig. 2)

Lamarck, 1822b: 161 (l'Océan américain).

Deslongchamps, 1859: 55, reprint: 38 (*M. calcitrapa*).

IJzerman, 1931: 36 (*M. salleanus*).

Clench & Pérez Farfante, 1945: 28, pl. 15 figs. 1, 2, pl. 16 figs. 1, 2.

Durand, 1960: 34, 37.

Bullis, 1964: 105.

Altena, 1969a: 20, 43.

The specimens from the shell ridges are more or less damaged and worn. Two that had been washed ashore were identified by Dr. G. E. Radwin. Of

those dredged by the "Coquette" some were alive or looked very fresh; the identification of the specimen from Station 23 is somewhat doubtful.

Bullis mentioned *M. brevisfrons* already from three localities off the Suriname coast, at 17 to 23 fathoms depth.

Occurrence in Suriname

Shell ridges. — Stalweide (1); Coronieweg, picket 450 and 560 (8); Garnizoenspad (no exact locality).

Washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); "Paramaribo" (van Heurn); Braamspunt (80).

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), B1 (NW of mouth Marowijne River), C1 (NNW Coppename), E3 (NNW of Marowijne River, ca. 30 miles off the coast), 23 (6°24' N 54°59.5' W), VRA 11a (off 30-45 miles E of lightship), VRA 20 (off ca. 5 miles NW of lightship), VRA 63 (off 10 miles NW of lightship); (5-)8-20(-23) fms.

Occurrence in the other Guianas

Washed ashore or dredged off the coast. — Îles du Salut (Deslongchamps).

Dredged off the coast. — French Guiana (Durand); two localities off French Guiana, 15-30 fms. (Bullis).

**Murex (Favartia) cellulossus nuceus** Mörch

[Conrad, 1846: 25 (*M. cellulosa*, Tampa Bay)].

Mörch, 1850: 31, pl. 1 figs. 9, 9 (*M. n.*, ad Insulas Antillarum).

Clench & Pérez Farfante, 1945: 54, pl. 28 figs. 4-6.

Occurrence in Suriname

Dredged off the coast. — Station 309-360 (6°19'-6°55' N 55°13'-55°40' W); (14-29) fms.

**Typhis (Talityphis) expansus** Sowerby

Sowerby, 1874: 719, pl. 59 fig. 4 (no locality).

Gertman, 1969: 167, pl. 5 figs. 5a, 5b, 6a, 6b (with list of references).

Bayer, 1971: 166, figs. 35B, 36A, 37 A-C.

There is one, somewhat worn, specimen, but I saw more and well-preserved specimens dredged by the O.C.P.S. Expedition.

Occurrence in Suriname

Dredged off the coast. — Station 206 (6°22' N 54°01' W); 13 fms.

**Trachypollia didyma** (Schwengel)

Schwengel, 1943: 76, pl. 7 fig. 7 (*Drupa d.*, off Palm Beach, Florida).

Radwin & D'Attilio, 1972: 330, figs. 1J, 7, 8, 9.

My specimen, of which the protoconch is broken off, measures 11 mm and exactly matches Schwengel's figure.

Occurrence in Suriname

Dredged off the coast. — Station "8" (off the Surinam coast); 24 fms.

## THAIDIDAE

**Thais (Thaisella) coronata coronata** (Lamarck) (pl. 3 figs. 3, 4)

Lamarck, 1822b: 241 (*Purpura c.*, les mers du Sénégal).

Schepman, 1887: 152 (*Purpura c.*, partim).

Clench, 1947: 71, pl. 35 figs. 1, 2 (*Th. c.*).

? Durand, 1960: 34, 35 (*Th. c.*).

Altena, 1969a: 19, ? 43.

Few specimens from the shell ridges and the beach, they are all in poor condition. The specimen found at the Marowijne by Voltz was probably not from a shell ridge.

Occurrence in Suriname

Shell ridges. — Stalweide (1); Cupido (4); ? at the Marowijne (Schepman).

Washed ashore. — Near the mouth of Corantijn River (51); Braampunt (80); Galibi (93); Langamankondre-Christiaankondre (94-95).

Occurrence in the other Guianas

Living on the coast. — French Guiana: “sur les côtes rocheuses de l’île de Cayenne et à l’embouchure des rivières” (Durand), this probably is the subspecies *T. c. trinitatensis*.

**Thais (Thaisella) coronata trinitatensis** (Guppy) (fig. 15, pl. 3 figs. 5, 6)

[Lamarck, 1822b: 241 (*Purpura c.*, les mers du Sénégal)].

Guppy, 1875: 50 (*Purpura tr.*, Gulf of Paria, Trinidad); 1878: 179, pl. 7 fig. 17 (*Purpura tr.*).

Schepman, 1887: 152 (*Purpura c.*, partim).

? IJzerman, 1931: 36 (*Th. c.*).

Clench, 1947: 69, pl. 34 figs. 1-4 (*Th. tr.*).

Graham, 1955: pl. 2 figs. 1, 4, ?5 (*Th. haemastoma*).

? Durand, 1960: 34, 35 (*Th. c.*).

Altena, 1969a: 7, 10, 19, 20, 23, 26, ? 43, 44.

Green & Hill, 1971: 32, pl. 2 fig. 9.

This subspecies lives in great quantities on the coast and in the estuaries, e.g. attached to jetties. As the graphs from the jetty at Leonsberg show (fig. 15) the measurements of the two sexes do not differ in a significant way. Almost certainly it was this subspecies, and not the nominate form, that was mentioned by IJzerman and Durand. The locality “at the Marowijne”, where the nominate form and the subspecies were found together, was probably also not a shell ridge.

Occurrence in Suriname

Shell ridges. — Stalweide (1); Cupido (4); Coronie (Schepman); Post Groningen (15, Schepman); Kwattaweg, km 20 (between 17 and 18); Jodenkerkhof (23, Schepman); ? at the Marowijne (Schepman).

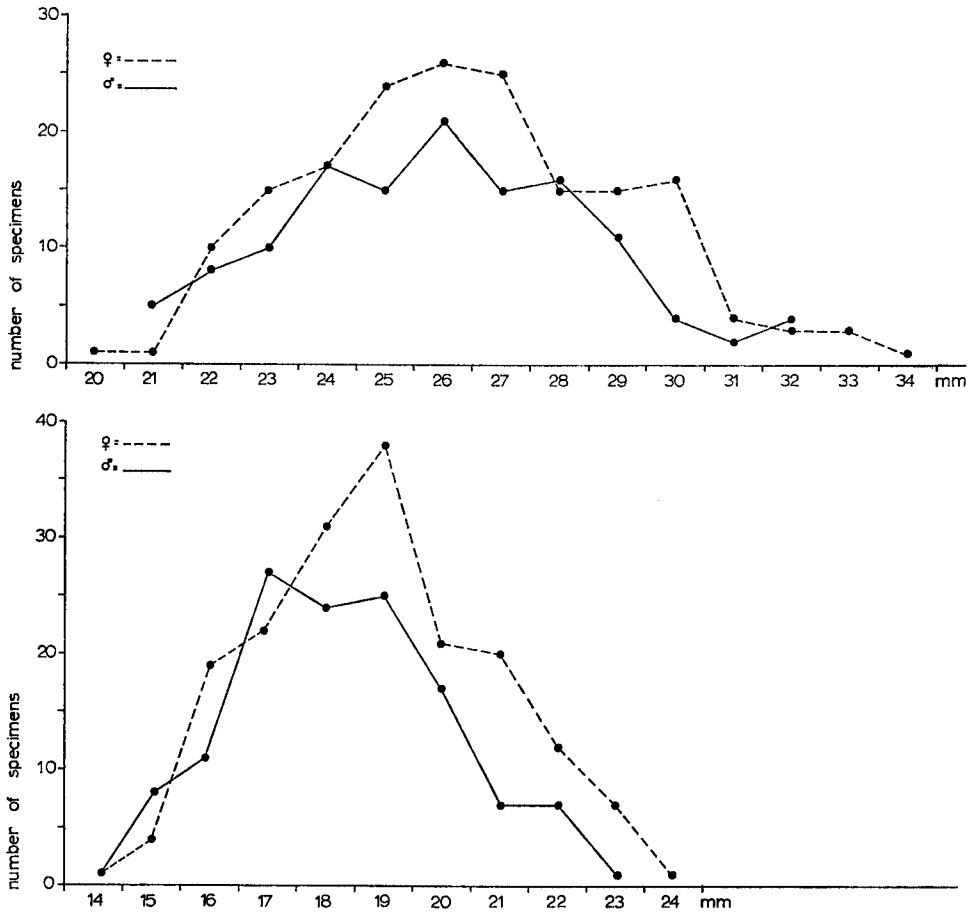


Fig. 15. *Thais (Thaisella) coronata trinitatis* (Guppy), jetty at Leonsberg near Paramaribo, Suriname District, 22 I 1963, Dr. C. O. van Regteren Altena coll. Graphic of height (above) and breadth (below) of 128 male and 176 female specimens.

Alive (!) or washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (!, 52); beach eastern bank Nickerie River (!, 54); near Kweriman Creek (56); Totness (59); jetty of ferry on Coppename River (!, 60); near Popogaimama Creek (65); Toniholo (67); end of Fernandez road (!, 69); jetty at Leonsberg (!, 71); Plantation Resolutie (78); Braamspunt (!, 80); near Matapica Canal (!, 84); Krofajapassie to 9½ km E (!, 86-87½); Bigisanti (88); Wiawia bank (!, 89); Christiaankondre-Langamankondre (94-95).

## Occurrence in the other Guianas

Living or washed ashore. — Guyana (Graham); Georgetown, Guyana (RNHL); French Guiana (? Durand); Cayenne (RNHL).

**Thais (Stramonita) cruentata** (Gmelin) (pl. 3 figs. 7, 8)

Gmelin, 1791: 3491 (*Buccinum cruentatum*, no locality; with reference to Chemnitz, figs. 1143, 1144; Chemnitz, 1780: 34, no locality).

Lamarck, 1822b: 244 (*Purpura cr.*).

Schomburgk, 1847: 107 (*Purpura cataracta*).

Troschel, 1848: 545 (*Purpura cataracta*).

Deslongchamps, 1859: 56, reprint: 39 (*Purpura cr.*).

Schepman, 1887: 152, 162 (*Purpura Floridana*).

IJzerman, 1931: 36 (*Th. floridana*).

Audretsch, 1953: 239, 241 (*Purpura floridana*).

Graham, 1955: pl. 2 fig. 21 (*Th. floridana*).

Altena, 1969a: 19, 20, 21, 23, 43, 44 (*Th. haemastoma floridana*).

Green & Hill, 1971: 31, pl. 2 fig. 10 (*Th. haemastoma floridana*).

This form seems to agree with *Buccinum cruentatum* figured by Chemnitz and that indicated by Lamarck as *Purpura cruentata* from "les mers de Guyane". The shells are little variable along the whole Suriname coast and, therefore, I have not treated the present form as a subspecies of *Thais haemastoma* (L.) (*Buccinum h.*, Linné, 1767: 1202). The egg-capsules are always found beside (not on) each other (Pl. 3 fig. 8) and have a form slightly different from those of *Th. floridana* (Conrad) (Radwin & Chamberlin, 1973: figs. 4, 4a).

From the beach near Matapica Canal we collected several egg-capsules; from Station E3 there are some living juvenile specimens and also some egg-capsules.

## Occurrence in Suriname

Drill holes. — Livorno, 10.00 m and/or Zorg en Hoop, 24.00-28.50 m and/or Nieuw Amsterdam, 16.50 m under surface; Zorg en Hoop, 36 m under surface (Audretsch).

Shell ridges. — Stalweide (1); clay dug from a canal near Hertenrits (3); Cupido (4); Coronie (Schepman); Indjikondre, km 135 (6); kilometre-stone 50 (14); Post Groningen (15, Schepman); Jodenkerkhof (23, Schepman); Munderweg (24); Anna Catharina (34, Schepman).

Living (!) or washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); beach eastern bank Nickerie River (54); near Kweriman Creek (56); ± 12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Hermina flat (63); near Popogaimama Creek (65); Toniholo (67); end of Fernandez Road (69); Plantation Resolutie (78); Braampunt (80); near Kat Creek (82); near Matapica Canal (!, 84); Halet (85); Krofajapassie to 9½ km E (!, 86-



87½); Bigisanti (1, 88); Wiawia beach (89); Galibi (93); Christiaankondre-Langamankondre (94-95).

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), E3 (NNW of Marowijne River, ca. 30 miles off the coast), E6 (N of Suriname River, 20 miles off the coast), 2 (6°23' N 55°05.5' W), 23 (6°24' N 54°59.5' W) 159 (6°22' N 55°02.5' W); 14-15(-20) fms.

Occurrence in the other Guianas

Washed ashore. — At the mouth of Wiani River, Guyana (Schomburgk); Guyana (Graham); Georgetown, Guyana (RNHL).

Washed ashore or dredged off the coast. — Les mers de la Guyane (Lamarck); île St.-Joseph, Cayenne, both French Guiana (Deslongchamps).

#### COLUMBELLIDAE

##### **Mitrella lunata** (Say)

Say, 1826: 213 (*N[assa]. l.*, coast of the Southern [United States]).

Two specimens were dredged by the "Coquette"; they were identified by Dr. G. E. Radwin. The specimens are of the white variety with reddish-brown dilated lines.

Occurrence in Suriname

Dredged off the coast. — Station E3 (NNW of the Marowijne River, ca. 30 miles off the coast); 20 fms. or less. — Station VRA 18a (N of mouth Coppename River) from concretion; depth unknown.

##### **Anachis (Parvanachis) obesa** (C. B. Adams) (fig. 16a, b)

C. B. Adams, 1848: 2 (*Buccinum obesum*, Jamaica).

Clench & Turner, 1950a: 319, pl. 32 fig. 11 (*Buccinum obesum*).

Radwin, 1968: 145 (*Buccinum obesum*), fig. 5.

Altena, 1969b: 178 (partim).

Specimens from the drill holes are incomplete and, therefore, of dubious identity. The species is rare on the shell ridges, but very common locally on the beach, where very fresh shells occur. Some specimens were identified by Dr. G. E. Radwin and after some hesitation I agreed with this identification, because there exists a fairly great variability according to Dr. Radwin.

The lectotype of *A. obesa* is larger: 5.3 mm, while my specimens reach a height of about 4.5 mm. The lectotype has a smaller protoconch of two and a half and a larger teleoconch of nearly five whorls. My specimens vary from three to three and a half whorls protoconch and from somewhat more than three to four whorls teleoconch. The aperture of my specimens is practically the same as that in the lectotype.

From the "Coquette", Station VRA 11, of which one specimen is figured

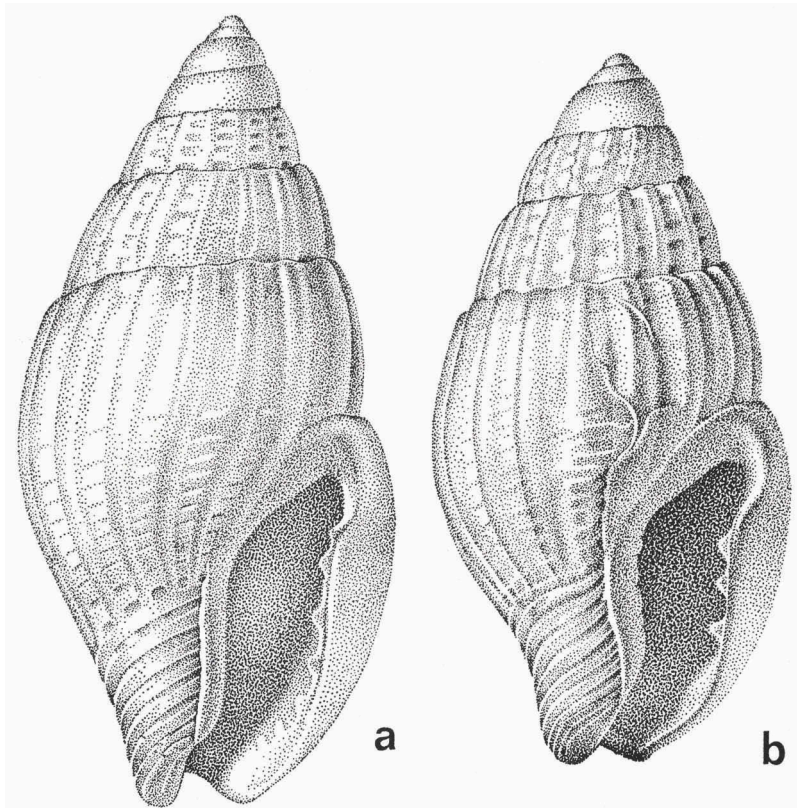


Fig. 16a, b. *Anachis (Parvanachis) obesa* (C. B. Adams), a: beach at Bigisanti, Marowijne District, 12 VII 1955, Dr. D. C. Geijskes coll.; height 4.6 mm; b: Station VRA 11, off 3 miles E to 6 miles W of lightship, 17-18 fms., I 1963, "Coquette" coll.; height 3.7 mm. Mr. W. C. G. Gertenaar del.

(fig. 16b), the specimens come very near *A. (P.) isabellei* (Orbigny) (1835-1843 [1834-1847]: pl. 61 figs. 18-21 (*Buccinum* I., 1839), 433 (*Nassa* I., 1841). Of the holotype of *Buccinum isabellei* I got a photograph by the courtesy of Dr. J. D. Taylor, BM(NH), which is figured here (pl. 6 figs. 12, 13). *A. isabellei* has fewer axial ribs, the body whorl is more rounded, below more bended inward and the aperture is wider.

#### Occurrence in Suriname

Drill holes. — ? Alliance 28 (44), 15.00 and 16.25 m under surface.

Shell ridges. — Clay dug from a canal near Hertenerits (3); Sidoredjo (12); Munderweg (24).

Washed ashore. — Nickerie (Voltz); near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); near Kweriman Creek (56); ± 12

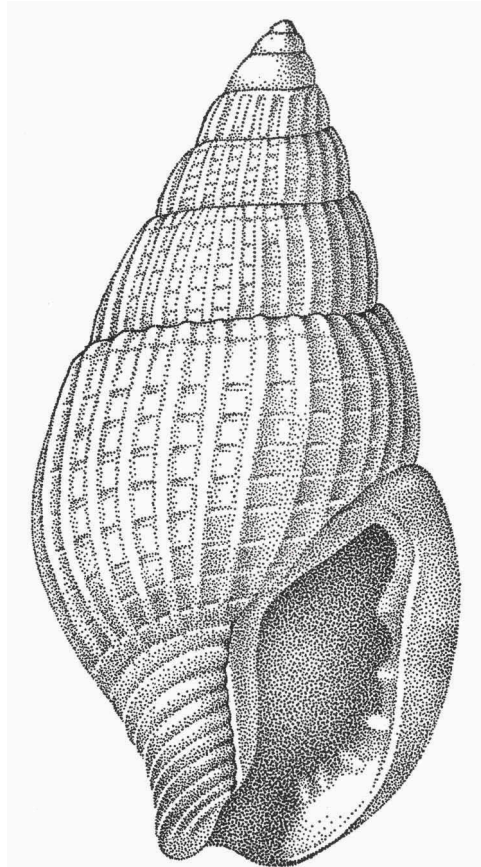


Fig. 17. *Anachis (Parvanachis) radwini* nov. spec., holotype, Nickerie, Nickerie District, between 1850 and 1853, F. Voltz coll.; height 5.6 mm. Mr. W. C. G. Gertenaar del.

km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Hermina flat (63); near Matapica Canal (84); Krofajapassie to  $9\frac{1}{2}$  km E (86-87 $\frac{1}{2}$ ); Bigisanti (88).

Dredged off the coast. — Station VRA 11 (off 3 miles E to 6 miles W of lightship) on shells; (17-18) fms.

***Anachis (Parvanachis) radwini* nov. spec. (fig. 17)**

Altana, 1969b: 178 (*A. obesa*, partim).

Green & Hill, 1971: 34, pl. 3 fig. 16 (*A. obesa*).

Holotype. — Washed ashore at Nickerie, (1850-1853), F. Voltz coll.

Paratypes. — Drill holes: Alliance 28, 16.25 m below surface: 1 spec. — Shell ridges: Paramaribo, Munderweg: 2 spec. — Washed ashore: Nickerie: more than 10 spec.; near mouth of Corantijn River: 6 spec.; sea-dike Nieuw Nickerie: 1 spec.;  $\pm$  12 km

NE of Nieuw Nickerie: more than 10 spec.; District Saramacca,  $\pm 2/3$  distance Suriname River to Coppename Point: more than 10 spec.; Krofajapassie to  $9\frac{1}{2}$  km E: 2 spec.; Bigisanti: 9 spec.

Description. — Holotype  $5.6 \times 2.8$  mm, paratypes 4.5 to about 6 mm high. Shell fusiform, height of bodywhorl somewhat more than height of spire; protoconch about  $3\frac{1}{2}$  whorls, teleoconch about  $4\frac{1}{2}$  whorls; whorls slightly convex, shouldered below the suture.

Sculpture consisting of close-set axial ribs with spirals, the first of which crosses the axial ribs which appear as knobs along the suture; the other spirals are only seen between the ribs, there are about four on the penultimate whorl. On the body whorl the axial ribs end where the siphonal canal begins and the body whorl becomes slightly concave. There are about eight spirals between the ribs and about eight on the siphonal canal.

Aperture with a shouldered and robust outer lip which is strongly denticulate at the inside; callus on the body whorl and the siphonal canal which shows some small dents corresponding with the spirals; the siphonal canal is broader than in the preceding species.

The protoconch is translucent white, the teleoconch is white with some orange spots along the suture, in the middle and at the underside of the body whorl. These spots are best visible on the thickened outer lip of the aperture.

Derivatio nominis. — Named after Dr. G. E. Radwin, who identified several Muricidae and Columbelloidea for me.

Discussion. — Dr. G. E. Radwin gave the name *Anachis (Parvanachis) isabellei* (Orbigny) to this species. After having seen photographs of the holotype of this species (*Nassa i.*, pl. 6 figs. 12, 13) which I got through the courtesy of Dr. J. D. Taylor of the BM(NH), I do not think this identification is correct. *A. isabellei* is a smaller species, with far fewer axial ribs and a more rounded body whorl, and is, in my opinion, more like the preceding species, although there are differences which are discussed under *A. obesa*<sup>1)</sup>.

This species can always be distinguished from *A. obesa* by being larger, having more axial ribs and a broader siphonal canal.

Occurrence in Suriname

Drill holes. — Alliance 28 (44), 15.00? and 16.25 m below surface.

Shell ridges. — ? Cupido (4); Munderweg (24).

Washed ashore. — Nickerie (Voltz); near mouth of Corantijn River (51);

1) In his description of the subgenera *Suturoglypta* and *Parvanachis*, Dr. Radwin (1968) does not give the height ("length") of the body whorl, but that of the aperture (see Cox, 1955: fig. 1).

sea-dike of Nieuw Nickerie (52); beach eastern bank Nickerie River (54);  $\pm$  12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Hermina flat (63); camping site 11/12 VI 1959 (64); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88).

**Anachis (Costoanachis) sertulariarum** (Orbigny) (fig. 18)

Orbigny, 1835-1843 [1834-1847]: pl. 61 figs. 13-17 (*Buccinum s.*, 1839), 431 (*Columbella s.*, la baie de San-Blas, en Patagonie, 1841).

Green & Hill, 1971: 33, pl. 3 fig. 15 (*A. avara*).

The specimens from near Matapica Canal were identified by Dr. G. E. Radwin.

Occurrence in Suriname

Shell ridges. — Coronieweg, ridge 430B, washing water pit (8); Munderweg (24).

Washed ashore. — Near mouth of Corantijn River (51); sea-dike Nieuw Nickerie (52); Totness (59); near Matapica Canal (84).

**Anachis (Costoanachis) spec.** (fig. 19)

This species Dr. G. E. Radwin could not identify. Because I have seen only three worn specimens, I restrict myself to publishing a drawing of the best one and the localities at which it has been found. The species is much larger than the preceding one, it reaches a height of  $\pm$  15 mm.

Occurrence in Suriname

Washed ashore. — Near mouth of Corantijn River (51); Braampunt (80); Krofajapassie (86).

**Amphissa (Cosmioconcha) nitens** (C. B. Adams) (fig. 20a, b)

C. B. Adams, 1850: 60 (*Fusus n.*, Jamaica) (non vidi).

Clench & Turner, 1950a: 316, pl. 39 fig. 17 (*Fusus n.*).

From the drill holes we have only fragments of which the identification is doubtful. Four specimens were found washed ashore, from which two are fresh looking. Two specimens found washed ashore and one from Station E6 were identified by Dr. G. E. Radwin.

Occurrence in Suriname

Drill holes. — ? Alliance 28 (44), 15.00 and 16.25 below surface.

Washed ashore. — Hermina flat (63); camping site 11/12 VI 1959 (64).

Dredged off the coast. — Station E6 (N of Suriname River, 20 miles off the coast); 15 fms.

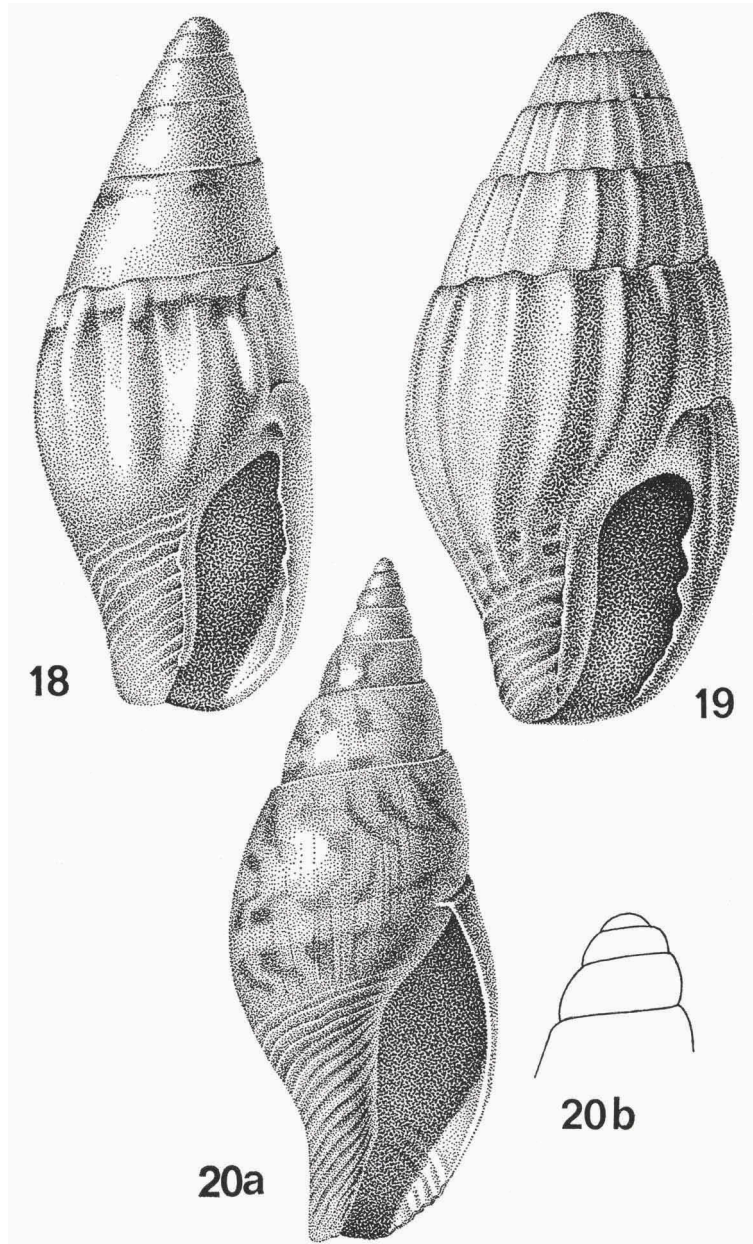


Fig. 18. *Anachis (Costoanachis) sertulariarum* (Orbigny), sand [near mouth of?] Matapica Canal, Commewijne District, 1956, Dr. W. A. Collier coll.; height 9.5 mm. Mr. W. C. G. Gertenaar del.

Fig. 19. *Anachis (Costoanachis)* spec., beach near mouth of Corantijn River, Nickerie District, 19 III 1963, Dr. C. O. van Regteren Altena coll.; height 14.6 mm. Mr. W. C. G. Gertenaar del.

Fig. 20a, b. *Amphisa (Cosmioconcha) nitens* (C. B. Adams), Station F1, N of Suriname River, 20 miles off the coast, 15 fms. or less, V 1957, "Coquette" coll.; a: shell, height 11.9 mm; b. top more enlarged. Mr. W. C. G. Gertenaar del.



## MELONGENIDAE

**Melongena melongena** (L.) (pl. 3 fig. 9)

- Linnaeus, 1758: 751 (*Murex M.*, in America).  
 Schomburgk, 1847: 107 (*Pyrula m.*)  
 Troschel, 1848: 545 (*Pyrula m.*).  
 Deslongchamps, 1859: 54, reprint: 37 (*Pyrula m.*).  
 Schepman, 1887: 153 (*Pyrula m.*).  
 Bayer, 1952: 268.  
 Graham, 1955: pl. 2 fig. 3 (*Thais* sp.).  
 Clench & Turner, 1956: 165, pl. 96 figs. 1, 2, pl. 98.  
 Altena, 1969a: 12, 19, 30, 43, 44.  
 Green & Hill, 1971: 36, pl. 3 fig. 19.

The specimens washed ashore are worn, even more so than some of those found on the shell ridges.

## Occurrence in Suriname

Shell ridges. — Nickerie (Schepman); Stalweide (1); Cupido (4); Idjikondre, km 134 (6); Coronieweg, picket 216 (8); Kwattaweg, km 20 (between 17 and 18); Vierde Rijweg (20); Derde Rijweg (21); ridge Cultuurtuin (24).

Washed ashore. — Beach near mouth of Corantijn River (51); beach near Nieuw Nickerie (? 52); beach eastern bank Nickerie River (54); beach Kweriman Creek (56); Coppename Point (62); Braamspunt (80); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Tijger Bank (92); Galibi (93); Langamankondre (95).

Dredged off the coast. — Station 250-256 (6°41' N 55°26.5'-55°43' W); (23-24) fms.

## Occurrence in the other Guianas

Washed ashore. — At the mouth of Wiani River, Guyana (Schomburgk, Troschel); Guyana (Graham).

Washed ashore or dredged off the coast. — Cayenne, French Guiana (Deslongchamps).

**Pugilina morio** (L.) (pl. 4 fig. 1)

- Linnaeus, 1758: 753 (*Murex M.*, no locality).  
 Schomburgk, 1847: 107 (*Fusus M.*).  
 Troschel, 1848: 545 (*Fusus m.*).  
 Deslongchamps, 1859: 54, reprint: 37 (*Fusus m.* and *coronatus*; tous mes spécimens appartiennent à la variété *coronatus*).  
 Schepman, 1887: 153 (*Pyrula m.*).  
 Bayer, 1952: 284 (*Semifusus m.* subsp. *coronata*).  
 Graham, 1955: pl. 2 fig. 2 (*Thais* sp.).  
 Clench & Turner, 1956: 185, pl. 96 fig. 6, pl. 109.  
 Durand, 1960: 34, 35 (*Semifusus m.*).  
 Altena, 1969a: 7, 19, 30, 43.  
 Green & Hill, 1971: 37, pl. 4 figs. 25, 25.

From the shell ridges we have only fragments; washed ashore they are frequently inhabited by the hermit crab *Clibanarius vittatus* (Bosc) (det. Holthuis). One specimen was found alive on the root of a parwa tree (*Avicennia nitida*).

Occurrence in Suriname

Shell ridges. — Cupido (4); Coronie (Schepman); Jodenkerkhof (23, Schepman); Munderweg (24), Anna Catharina (34, Schepman).

Living (!) or washed ashore. — Beach near mouth of Corantijn River (51); beach eastern bank Nickerie River (54); near Kweriman Creek (56); Totness (59); near Popogaimama Creek (65); end of Fernandez Road, on parwa root (!, 69); Suriname River near Combé (73); Braamspunt (80); near Kat Creek (82); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88).

Occurrence in the other Guianas

Washed ashore. — At the mouth of Wiani River, Guyana (Schomburgk, Troschel); Guyana (Graham); Georgetown, Guyana (RNHL).

Washed ashore or dredged off the coast. — Cayenne, French Guiana (Deslongchamps); French Guiana (Durand).

NASSARIIDAE

**Nassarius polygonatus** (Lamarck) (pl. 6 fig. 11)

Lamarck, 1822b: 278 (*Buccinum polygonatum*, no locality).

Schomburgk, 1847: 107 (*Buccinum Miga*).

Troschel, 1848: 545 (*Buccinum miga*).

Deslongchamps, 1859: 58, reprint: 41 (*Buccinum polygonatum*).

Schepman, 1887: 153, 162 (*Nassa Antillarum*).

IJzerman, 1931: 36 (*N. antillarum*).

Graham, 1955: pl. 2 fig. 6 (*Nassa Paupertia*).

Altena, 1969a: 19, 20, 30, 34, 43, 44 (*N. vibex*).

Green & Hill, 1971: 35, pl. 3 figs. 18, 18 (*N. vibex*).

Miss S. D. Kaicher, who studies the genus *Nassarius* in the western Atlantic, identified this species. The specimens washed ashore are more or less worn.

Occurrence in Suriname

Drill holes. — Hole V6-312, 16-20 feet (42).

Shell ridges. — Stalweide (1); Cupido (4); Coronie (Schepman); Coronieweg near Coppename (E of 8); Carl François, km 76 (10); Post Groningen (15, Schepman); clay dug from a canal near Jarikaba (19); Blauwgrond (26); Anna Catharina (34, Schepman).

Washed ashore. — Beach near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); beach Coronie (no exact locality); Totness (59); near Toeholi Creek (66); Braamspunt (80); near Kat Creek (82); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½).



Occurrence in the other Guianas

Washed ashore. — At the mouth of Wiani River, Guyana (Schomburgk, Troschel); Guyana (Graham).

Washed ashore or dredged off the coast. — Cayenne, île St.-Joseph, both French Guiana (Deslongchamps).

**Nassarius** cf. **consensus** (Ravenel)

Ravenel, 1862: 43 (*Nassa consensa*, South Carolina).

Mrs. S. D. Kaicher is studying this species with many others which occur in the Western Atlantic, and about which she will report in the future.

The specimen from "Coquette", Station 2, was inhabited by the hermit crab *Clibanarius foresti* Holthuis (det. Holthuis); from Station E6 there are seven rather fresh-looking specimens.

Occurrence in Suriname

Dredged off the coast. — Stations E6 (N of Suriname River, 20 miles off the coast), F1 (N of Suriname River, 20 miles off the coast), 2 ( $6^{\circ}23' N$   $55^{\circ}05.5' W$ ); 15 fms. or less.

FASCIOLARIIDAE

**Latirus brevicaudatus** (Reeve) (pl. 4 fig. 2)

Reeve, 1847: pl. 10 fig. 50, with text (*Turbinella brevicaudata*, no locality).

Dr. R. Bullock kindly identified one adult and two juvenile specimens. It appears to belong to a very variable species. My specimens, those of the "Snellius" O.C.P.S. Expeditions in 1966 and 1969, and those dredged by the "Luymes" Guyana Shelf Expedition off French Guiana are in accordance with each other. They are more slender and have a longer siphonal canal than *L. brevicaudatus* from Panama and Curaçao, whereas they are much smaller than, and differ further from, *L. infundibulum* (Gmelin).

Occurrence in Suriname

Dredged off the coast. — Stations E2 (NNW of Marowijne River, 30 miles off the coast), E3 (NNW of Marowijne River, ca. 30 miles off the coast), 250-256 ( $6^{\circ}41' N$   $55^{\circ}26.5'-55^{\circ}43' W$ ); 20-23(-24) fms. or less.

**Fasciolaria tulipa** (L.)

Linnaeus, 1758: 754 (*Murex T.*, no locality).

Durand, 1960: 34, 37.

Altena, 1969a: 12, 43.

There is one specimen washed ashore; of those dredged by the "Coquette" the one from Station B1 was alive.

Occurrence in Suriname

Washed ashore. — Braamspunt (80).

Dredged off the coast. — Stations A2 (NNW of Coppename, 20 miles off the coast), B1 (NW of mouth Marowijne River, ca. 20 miles off the coast), E2 (NNW of Marowijne River, 30 miles off the coast), 289 (6°52.5' N 55°53' W), "14" (off the Suriname coast); 15-27 fms.

Occurrence in the other Guianas

Living (!) and dredged off the coast. — French Guiana (!, Durand).

### **Fusinus closter** (Philippi) (pl. 4 figs. 3-5)

Philippi, 1847-1851: 115, *Fusus* pl. 5 fig. 1 (*Fusus cl.*, Insula Margarita in India Occidentali; 1850).

Kobelt, 1881: 169, pl. 53 figs. 1, 2 (*Fusus cl.*).

? Durand, 1960: 34, 37 (*Fusus turris*).

Altena, 1969a: 12.

I think that my specimens are of one, slightly variable species. They are white with sometimes a light brown periostracum and red-brown lines or little spots between the axial ribs. The full-grown specimens have a slightly more rounded aperture than the figures of Philippi and Kobelt show. The inner lip can be developed in rather young specimens, so it is very prominent in a specimen from Station E3 measuring 59 mm, while our largest specimen is somewhat higher than 147 mm, with the top broken off. Most times the ribs diminish at the lower whorls and so they can scarcely be seen at the last whorl, but sometimes the ribs extend as far as the aperture, especially on the middle spiral, as in Kobelt's pl. 52 fig. 2.

Most specimens were probably dredged alive, but only a ! is added to those which were certainly living when dredged. The five specimens from Station E3 have clusters of eggs.

Occurrence in Suriname

Living (!) and dredged off the coast. — Stations A1 (NNW Coppename), B1 (!, NW of mouth Marowijne River), E3 (!, NNW of Marowijne River, ca. 30 miles off the coast), 30 (6°49.5' N 54°54' W), 157 (6°22' N 55°03.5' W), 214 (! 6°47' N 54°29' W), 250-256 (6°41' N 55°26.5'-55°43' W), 277 (6°42.5' N 55°31.5' W), 286 (6°51' N 55°49' W), 289 (6°52.5' N 55°53' W), 318 (6°42' N 55°38' W), "1", "6", "7", "8", "11", "14" (all six off the Suriname coast); (2-)17½-27 fms.

Occurrence in the other Guianas

Living (!) and dredged off the coast. — ? French Guiana (!, Durand).

### **Fusinus eucosmius** (Dall)

Dall, 1889: 167, pl. 35 fig. 5 (*Fusus e.*, West Florida, near Cuba, off Barbados, off Key West, Gulf of Mexico).

Bayer, 1971: 183, fig. 45.

My specimen is larger (116 mm) than those of Dall, but for the rest Dall and Bayer's figures agree with my specimen. In one smaller specimen of the "Snellius" O.C.P.S. Expedition in 1969 the protoconch is entire and also agrees with the figure of Bayer.

Occurrence in Suriname

Living (!) and dredged off the coast. — Station VRA 5 (!, off the Suriname coast); depth unknown.

OLIVIDAE

**Olivella (Olivella) cf. adelae** Olsson (pl. 8 fig. 4)

Olsson, 1956: 173, pl. 10 figs. 8, 8a, pl. 16 figs. 9, 9a.

Mr. P. A. Teunissen found in 1970 at the beach near Bigisanti one specimen which may belong to this species. The protoconch agrees with that of *O. adelae*, but the colour reminds more of *O. nivea* (Gmelin). As I have seen only one specimen, I record it as *O. cf. adelae*. The specimen was seen by Dr. A. A. Olsson, who agreed with this identification as long as no further specimens have been found.

Occurrence in Suriname

Washed ashore. — Bigisanti (88).

**Olivella (Olivella) olssoni** Altena (fig. 21a-c)

Altena, 1971a: 82, textfig. 5a-c (Suriname, Bigisanti).

Green & Hill, 1971: 38, pl. 3 figs. 20, 21.

Occurrence in Suriname

Shell ridges. — Munderweg (24).

Washed ashore. — Near mouth of Corantijn River (51); beach at sea-dike of Nieuw Nickerie (52); ± 12 km NE of Nieuw Nickerie (near 57); Totness (59); camping site 11/12 VI 1959 (64); near Kat Creek (82); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88).

Dredged off the coast. — Station 197 (6°22.5' N 55°10' W) from tubes of *Diopatra cuprea* (Bosc); 11 fms.

**Olivella (Niteoliva) verreauxii** (Ducros) (fig. 22a, b)

Ducros de St-Germain, 1857: 97, pl. 3 figs. 86a, b (*Ol[iva]. v.*, Marie Galante, Antilles).

Olsson, 1956: 191, pl. 9 fig. 3.

Marcus, 1959: 189-196, pl. 1.

non Altena, 1969a: 12 (*O. verreauxi*).

The species mentioned by me as *Olivella verreauxi* was, in fact, originally correctly identified and was, therefore, *O. (Niteoliva) minuta* (Link) = *O. nitidula* (Dillwyn). The specimen of *O. verreauxii* figured by Olsson has

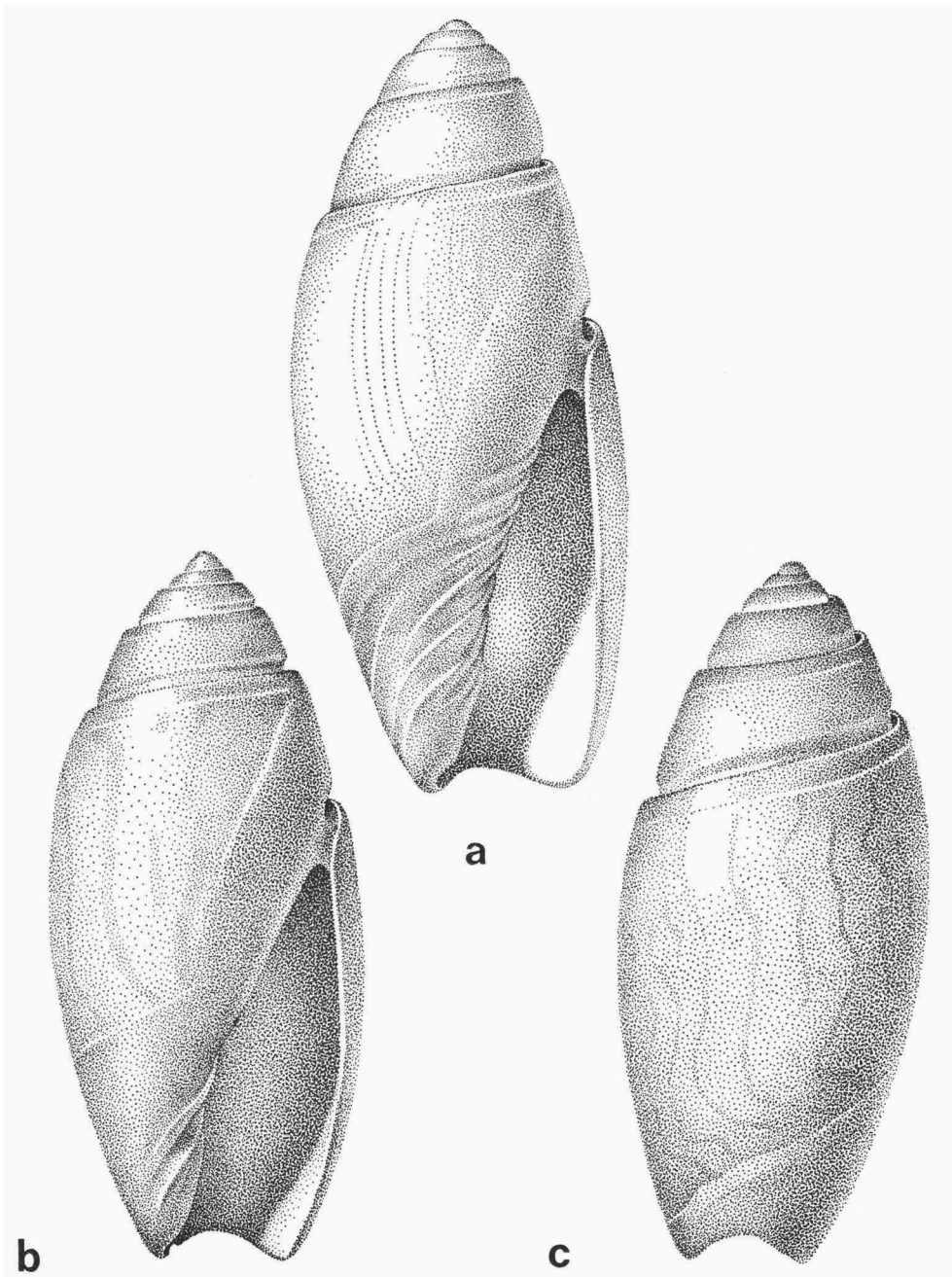


Fig. 21a-c. *Olivella (Olivella) olssoni* Altena, beach at Bigisanti, Marowijne District, 12 VII 1955, Dr. D. C. Geijskes coll.; a: holotype, height 6.7 mm; b, c. paratype, height 6.0 mm. Mr. W. C. G. Gertenaar del.

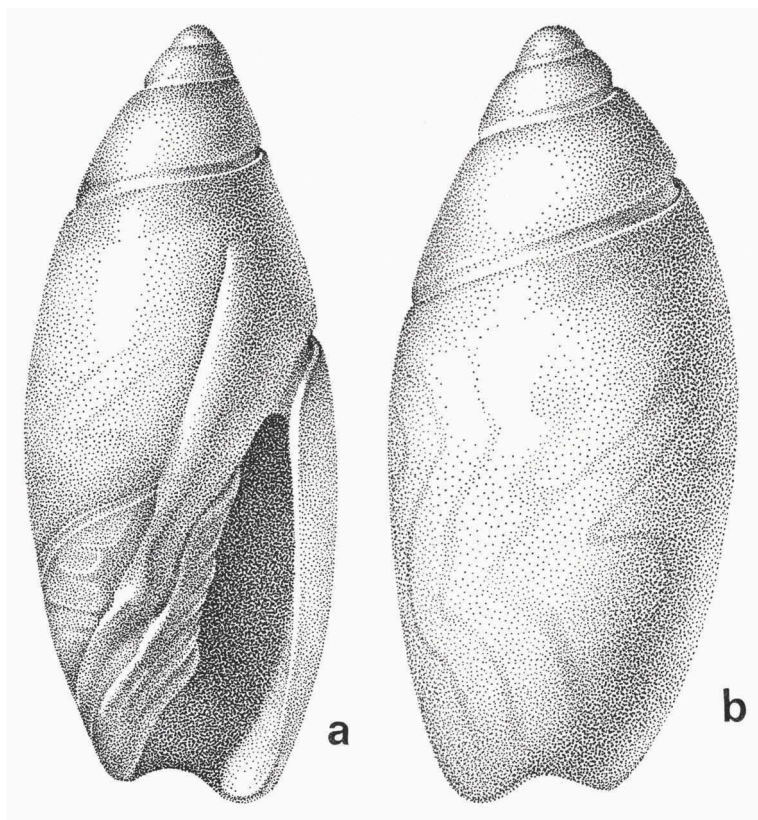


Fig. 22a, b. *Olivella (Niteoliva) verreauxii* (Ducros), beach near mouth of Corantijn River, Nickerie District, 19 III 1963, Dr. C. O. van Regteren Altena coll. a: height 9.0 mm; b: height 6.4 mm. Mr. W. C. G. Gertenaar del.

a height of 14.1 mm, while my largest specimen measures 9.3 mm. But otherwise my specimens quite agree with the description by Ducros and the figure by Olsson.

#### Occurrence in Suriname

Shell ridges. — Tambaredjo (13); clay dug from a canal near Jarikaba (19); Munderweg and Charlesburg (24); Lust en Rust (29).

Washed ashore. — Beach near mouth of Corantijn River (51); beach at sea-dike Nieuw Nickerie (52); beach eastern bank Nickerie River (54);  $\pm$  12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Halet (85).

## MITRIDAE

**Vexillum (Costellaria) hendersoni** (Dall)

Dall, 1927: 49 (*Mitra h.*, off Georgia).

Rehder, 1943: 200, pl. 20 fig. 12 (*Pusia h.*, off Bears Cut, Miami, Florida).

This identification I owe to Dr. H. A. Rehder of the USNM. He compared my specimens with *Mitra hendersoni* Dall and *Pusia hendersoni* Rehder, which had been considered synonymous already earlier. The specimen of *Pusia hendersoni* is unusually inflated and not quite fully mature and, accordingly, lacks the lirations on the inside of the outer lip. It must be included in the subgenus *Costellaria* of *Vexillum* according to Dr. Rehder.

Occurrence in Suriname

Dredged off the coast. — Stations 29 (6°49' N 54°54' W); "1", "7", "11" (all three off the Suriname coast); (2-) 24-26 fms.

## VASIDAE

**Turbinella laevigata** Anton

Anton, 1839: 71 (no locality).

Abbott, 1950: 207, pl. 91 (*Xancus laevigatus*).

Only one specimen (without exact locality) dredged off the coast was alive, the others were mostly overgrown by other organisms, such as corals, bryozoans and barnacles. There were also some specimens with the peristome entire that were inhabited by a pagurid.

Occurrence in Suriname

Dredged off the coast. — Stations A1 (NNW Coppename), B1 (NW of mouth Marowijne River), E3 (NNW of Marowijne River, ca. 30 miles off the coast), 23 (6°24' N 54°59.5' W); VRA 4 (N of lightship), VRA 11 (off 3 miles E to 6 miles W of lightship), VRA 17 (N of lightship), VRA 20 (off ca. 5 miles NW of lightship); (8-) 15-30 fms. — ? and VRA 5 (both off the Suriname coast); depth unknown.

## CANCELLARIIDAE

**Cancellaria** spec.

Of this species we have only the egg-capsules which are very characteristic. They were identified by the late Prof. Dr. G. Thorson.

Occurrence in Suriname

Dredged off the coast. — Station 211 (6°44' N 54°31' W); 23 fms.

## MARGINELLIDAE

**Prunum marginatum** (Born)

Born, 1778: 207 (*Voluta marginata*); 1780: 220, pl. 9 figs. 5, 6 (*Voluta marginata*, no locality).

The specimens look partly very fresh and those from Station 178 were certainly dredged alive.

Occurrence in Suriname

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), E2 (NNW of Marowijne River, 30 miles off the coast), E6 (N of Suriname River, 20 miles off the coast), 178 (6°19' N 55°50.5' W), 216 (6°41.5' N 54°16' W), "7" (off the Suriname coast); 15-24 fms.

**Prunum prunum** (Gmelin) (pl. 4 figs. 6, 7)

Gmelin, 1791: 3346 (*Voluta Pr.*, frequens ad Goream).

Schomburgk, 1847: 107 (*Marginella coerulescens*).

Troschel, 1848: 545 (*Marginella coerulescens*).

Deslongchamps, 1859: 60, reprint: 43 (*Marginella caerulescens*).

Schepman, 1887: 153 (*Marginella pr.*).

IJzerman, 1931: 36 (*Marginella pr.*).

Graham, 1955: pl. 2 fig. 7 (*Marginella sp.*).

Weisbord, 1962: 400, pl. 36 figs. 9, 10 (*Marginella pr.*, with list of references).

Altena, 1969a: 19, 20, 30, 33, 43, 44 (*Marginella pr.*).

Green & Hill, 1971: 39, pl. 3 fig. 22 (*Marginella pr.*).

This is one of the gastropods found most commonly on the shell ridges and washed ashore on the beach.

Occurrence in Suriname

Shell ridges. — Nickerie (Schepman), Stalweide (1); clay dug from a canal near Hertenrits (3); Cupido (4); Coronie (Schepman); Ignikondre, km 134 (6); Bethania (north of 14); Post Groningen (15, Schepman); Munderweg and Charlesburgerweg (24); Blauwgrond (26); Anna Catharina (34, Schepman).

Washed ashore. — Near mouth of Corantijn River (51); beach sea-dike Nieuw Nickerie (52); beach eastern bank Nickerie River (54); near Kweriman Creek (56); ± 12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Hermina flat (63); camping site 11/12 VI 1959 (64); near Popogaimama Creek (65); Toniholo (67); end of Fernandez Road (69); Plantation Resolutie (78); Braamspunt (80); near Kat Creek (82); near Matapica Canal (84); Halet (85); Krofajapassie to 9½ km E (86-87½); Bigisanti (88); Wiawia coast (89).

Dredged off the coast. — Stations A3 (20 miles NNW of Coppename River), E6 (N of Suriname River, 20 miles off the coast); 15-17 fms.

Occurrence in the other Guianas

Washed ashore. — At the mouth of Wiani River, Guyana (Schomburgk, Troschel); Guyana (Graham); Georgetown, Guyana (RNHL).

Washed ashore or dredged off the coast. — Cayenne, île de la mer, both French Guiana (Deslongchamps).

## TURRIDAE

**Cerodrillia** aff. **perryi** Bartsch & Rehder (pl. 7 figs. 3, 4)

Bartsch & Rehder, 1939: 128, pl. 17 fig. 1 (Sanibel Island).

Mrs. Orr-Maes identified this species.

Occurrence in Suriname

Dredged off the coast. — Station "14" (off the Suriname coast); 23 fms.

**Clathrodrillia minor** (Dautzenberg) (pl. 7 figs. 1, 2)

Dautzenberg, 1900: 164, pl. 9 figs. 2, 2 (*Drillia gibbosa* var. *m.*; Martinique; Bahia Honda; Rio Hacha; Santa Marta; ile Marguerita).

My specimens have a finer spiral sculpture and somewhat less convex whorls, but for the rest they agree with the syntypes that I saw in the IRSN at Brussels. The present specimen from Station 250-256 is 14 mm high, the one from Station F1 is only a fragment (the top) and, therefore, of doubtful identity.

Occurrence in Suriname

Dredged off the coast. — Stations F1 (N of the Suriname River, 20 miles off the coast), 250-256 (6°41' N 55°26.5'-55°43' W), 277 (6°42.5' N 55°31.5' W); 15-24 fms. or less.

**Polystira albida** (Perry)

Perry, 1811: pl. 32 fig. 4, with text (*Pleurotoma a.*, New Zealand and Lord Howe's Island).

Durand, 1960: 34, 35.

Several specimens were dredged alive.

Occurrence in Suriname

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), B1 (NW of mouth Marowijne River), E2 (NNW of Marowijne River, 30 miles off the coast), E3 (NNW of Marowijne River, ca. 30 miles off the coast), 29 (6°49' N 54°54' W), 215 (6°41' N 54°17' W), 216 (6°41.5' N 54°16' W), 250-256 (6°41' N 55°26.5'-55°43' W), 283 (6°47' N 55°40' W), 286 (6°51' N 55°49' W), 289 (6°52.5' N 55°53' W), "1", "6", "7", "8", "11", "14" (all six off the Suriname coast); (2-)15-27 fms.

Occurrence in the other Guianas

Dredged off the coast. — French Guiana (Durand).

**Knefastia** spec. (pl. 4 figs. 8, 9, pl. 9 fig. 1)

The specimen from Station E3 is adult; it has more prominent spirals and is somewhat broader than the one from Station "1", but it lacks a protoconch. The young specimen from Station "1" has a protoconch.



Through the courtesy of Mr. D. L. F. Seeley of the BM(NH) I obtained two photographs of the protoconch of *Pleurotoma olivacea* Sowerby (1834a: 136), the type-species of the genus *Knefastia*. Its protoconch (pl. 9 fig. 2) agrees with that of the young specimen before me (although it is a little damaged) and I have placed it, therefore, in this genus. Most species in this genus are broader and more robust, but *Knefastia walkeri*, for instance, is more like it (Keen, 1971: 713, fig. 1662). Perhaps *Fusisyrinx fenimorei* Bartsch (1934: 7, pl. 2 figs. 4, 5) will prove to be a *Knefastia*; the protoconch is unknown, but the present specimens do resemble that species.

No description will be given, mainly because I have but two specimens and I am not quite sure that these are conspecific.

Occurrence in Suriname

Dredged off the coast. — Stations E3 (NNW of Marowijne River, ca. 30 miles off the coast), "1" (off the Suriname coast); (2-24) fms.

**Pyrgospira cf. tampaensis** (Bartsch & Rehder) (pl. 7 figs. 9, 10)

Bartsch & Rehder, 1939: 136, pl. 17 figs. 5, 13 (*Crassispira t.*, Tampa Bay, Florida).

Mrs. Orr-Maes identified my specimens from Station 28.

Occurrence in Suriname

Dredged off the coast. — Stations 28 (6°48' N 54°54' W), 250-256 (6°41' N 55°26.5'-55°43' W), 286 (6°51' N 55°49' W), 289 (6°52.5' N 55°53' W), "8" (off the Suriname coast); (23-)24-27 fms.

**Buchema hadromeres** (Melvill) (pl. 8 fig. 5)

Melvill, 1927: 153, pl. 12 fig. 3 (*Melatoma h.*, Jamaica).

A holocene fossil and a worn specimen identified with some doubt by Mrs. Orr-Maes. The species occurs in the "Snellius" material from off the Suriname coast. Mr. P. A. Teunissen found this specimen on a shell ridge.

Occurrence in Suriname

Shell ridges. — Charlesburg (24).

**Crassispira (Crassispirella) affinis** (Reeve) (pl. 7 figs. 5, 6)

Reeve, 1843-1846: pl. 34 fig. 309, with text (*Pleurotoma a.*, Island of St. Vincent, West Indies; 1846)

My two specimens of Station "14" were identified by Mrs. Orr-Maes.

Occurrence in Suriname

Dredged off the coast. — Stations "8", "14" (both off the Suriname coast); 23-24 fms.

**Crassispira (Crassispirella) chazaliei** (Dautzenberg) (pl. 7 figs. 7, 8)

Dautzenberg, 1900: 166, pl. 9 figs. 4, 4 (*Drillia ch.*, Cumana; Rio Hacha; Santa Marta; Baía de Taganga, Santa Marta).

Mrs. Orr-Maes confirmed the identification of the specimen from Station "6".

Occurrence in Suriname

Dredged off the coast. — Stations "6", "7", "11" (all three off the Suriname coast); 24 fms.

**Compsodrillia eucosmia** (Dall) (pl. 7 figs. 11, 12)

Dall, 1889: 86, pl. 13 fig. 1 (*Drillia e.*, near Granada).

This specimen was identified by Mrs. Orr-Maes.

Occurrence in Suriname

Dredged off the coast. — Station "6" (off the Suriname coast); 24 fms.

**Compsodrillia haliostrephis** (Dall) (pl. 7 figs. 13, 14)

Dall, 1889: 86, pl. 13 fig. 3 (*Drillia h.*, Gulf of Mexico).

A specimen also identified by Mrs. Orr-Maes.

Occurrence in Suriname

Dredged off the coast. — Station 29 (6°49' N 54°54' W); 26 fms.

**Glyphostoma (Glyphostomops) claudoni** (Dautzenberg)

(pl. 7 figs. 15, 16)

Dautzenberg, 1900: 167, pl. 9 figs. 5, 5 (*Drillia cl.*, Rio Hacha, Goajira, Bolivia).

Professor Dr. W. Adam kindly compared my specimen with the holotype of *Drillia claudoni* in the IRSN at Brussels. He informed me that the holotype is somewhat larger, the axial ribs on the last whorl being somewhat more developed, but for the rest the sculpture of all other whorls is exactly the same as in my specimen, and the aperture and peristome do not show any difference. I have included it in the subgenus *Glyphostomops*, although the protoconch has but two whorls, instead of two and a half.

Occurrence in Suriname

Dredged off the coast. — Station "2" (off the Suriname coast); 23 fms.

**Pyrgocythara (Platycythara) spec.** (pl. 8 fig. 6)

Mrs. Orr-Maes could identify this species only to the subgenus. Both the genus and subgenus were described as genera by Woodring (1928: 171, 172). In 1970 Mr. P. A. Teunissen found one specimen on a shell ridge.

Occurrence in Suriname

Shell ridges. — Alliance (44).

CONIDAE

**Conus austini** Rehder & Abbott

Rehder & Abbott, 1951: 22, fig. 7 (SE of Loggerhead Key, Dry Tortugas, Florida).

Van Mol, Tursch & Kempf, 1967: 236, fig. 1 (*C. cf. a.*).

Altana, 1969a: 31.

Van Mol, 1973: 265, fig. 2, pl. 1 figs. 5, 5'.

Most specimens were dredged alive and in a very fresh state.

Van Mol has recorded this species already from 13 localities off the Suriname coast, at 33-94 m depth.

#### Occurrence in Suriname

Dredged off the coast. — Stations A2 (NNW Coppename, 20 miles off the coast), E3 (NNW of Marowijne River, ca. 30 miles off the coast), 28 (6°48' N 54°54' W), 29 (6°49' N 54°54' W), 215 (6°41' N 54°17' W), 216 (6°41.5' N 54°16' W), 220 (6°42.5' N 54°11' W), 250-256 (6°41' N 55°26.5'-55°43' W), 277 (6°42.5' N 55°31.5' W), 283 (6°47' N 55°40' W), 286 (6°51' N 55°49' W), 289 (6°52.5' N 55°53' W), "1", "2", "6", "8", "14" (all five off the Suriname coast); (2-)15-27 fms.

#### **Conus centurio** Born

Born, 1778: 133; 1780: 153, pl. 7 fig. 10 (no locality).

Clench, 1942: 24, pl. 12 fig. 1.

Van Mol, Tursch & Kempf, 1967: 239, map 1, fig. 4, pl. 9 figs. 1a, b.

Altena, 1969: 31 (*C. sozoni*).

Clench & Bullock, 1970: 372, pl. 175.

Van Mol, 1973: 266.

Dr. Van Mol was so kind as to identify these specimens. Some of them were inhabited by *Paguristes depressus* Stimpson (det. Holthuis).

Van Mol has found this species already at six localities off the Suriname coast, at a depth of 25-94 m.

#### Occurrence in Suriname

Dredged off the coast. — Stations 30 (6°49.5' N 54°54' W), 277 (6°42.5' N 55°31.5' W), 286 (6°51' N 55°49' W), 306 (6°54' N 56°14' W), "11" (off the Suriname coast); 24-27 fms.

#### Occurrence in the other Guianas

Dredged off the coast. — Off Demerara, Guyana; 40 fms. (MP).

#### **Conus ermineus** Born

Born, 1778: 141; 1780: 159 ("Habitat in Indiis, *Martini*").

Altena, 1969a: 31 (*C. ranunculus*).

Clench & Bullock, 1970: 377, pl. 178.

Van Mol, 1973: 267, pl. 1 fig. 6.

The specimens are mostly more or less overgrown with barnacles, serpulids and corals. One specimen from Station 277, however, has the periostracum undamaged and looks as if it had been dredged alive. From Station 309-360 we have two specimens which were certainly alive when dredged.

Van Mol has found this species already at two localities off the Suriname coast, at 44-60 m depth. He figured a young specimen which has the spiral lines of little knobs more distinct than in older ones.

#### Occurrence in Suriname

Dredged off the coast. — Stations A<sub>1</sub> (NNW Coppename), B<sub>1</sub> (NW of mouth Marowijne River), E<sub>3</sub> (NNW of Marowijne River, ca. 30 miles off the coast), 277 (6°42.5' N 55°31.5' W), 279 (6°44' N 55°33' W), 309-360 (6°19'-6°55' N 55°13'-55°40' W), "2" (of the Suriname coast); (8-)17½-25 (-29) fms.

**Conus jaspideus** Gmelin

Gmelin, 1791: 3387 (no locality).

[Hwass in:] Bruguière, 1792a: (*C. verrucosus*).

Van Mol, Tursch & Kempf, 1967: 246, maps 1, 4, figs. 10, 16d, 17e, pl. 7 figs. 3a-d.

Altena, 1969a: 31 (*C. verrucosus*).

Van Mol, 1973: 266.

All specimens I saw from Suriname belong to the form *verrucosus* Hwass. Most of these appear to be fresh and have probably been dredged alive.

Van Mol has recorded this species already from 25 localities off the Suriname coast, at a depth of 33-60(-62) m.

Occurrence in Suriname

Dredged off the coast. — Stations E<sub>3</sub> (NNW of Marowijne River, ca. 30 miles off the coast), 215 (6°41' N 54°17' W), 216 (6°41.5' N 54°16' W), 250-256 (6°41' N 55°26.5'-55°43' W), 270 (6°42' N 55°50' W), 277 (6°42.5' N 55°31.5' W), 286 (6°51' N 55°49' W), 289 (6°52.5' N 55°53' W), 309-360 (6°19'-6°55' N 55°13'-55°40' W), "2", "6", "11", "14" (all four off the Suriname coast); (14-)20-27(-29) fms.

TEREBRIDAE

**Hastula cinerea** (Born) (pl. 8 fig. 7)

Born, 1778: 262 (*Buccinum cinereum*); 1780: 267, pl. 10 figs. 11, 12 (*Buccinum cinereum*, no locality).

Marcus, 1960a: 25-54, pl. 1-5.

Mrs. Twila Bratcher confirmed my identification; one specimen was found by Mr. P. A. Teunissen on a shell ridge.

Occurrence in Suriname

Shell ridges. — Charlesburg (24).

**Terebra taurina** ([Lightfoot])

[Lightfoot], 1786: 142 (*Buccinum taurinum*, China).

Occurrence in Suriname

Dredged off the coast. — Stations "11", "14" (both off the Suriname coast); 23-24 fms.

**Terebra** spec. 1

Mrs. Twila Bratcher is studying this species with some others occurring in the Western Atlantic and will report upon them in future.

Occurrence in Suriname

Dredged off the coast. — Station "11" (off the Suriname coast); 24 fms.

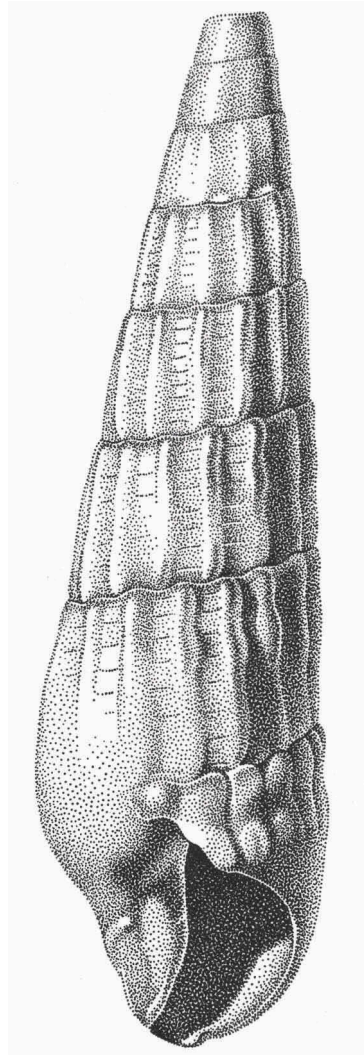


Fig. 23. *Terebra* spec. 2, shell ridge Charlesburg, 1970, Mr. P. A. Teunissen coll.; height 7 mm. Mr. W. C. G. Gertenaar del.

***Terebra* spec. 2 (fig. 23)**

In the USNM I found some specimens collected by Dr. H. von Ihering at Itopema, Sta. Catharina, Brazil. They are being compared with some of the specimens found on the shell ridges of Suriname, likewise by Mrs. Twila Bratcher, who will also report about them.

Occurrence in Suriname

Shell ridges. — Coronieweg, picket 216 and other localities of the 1948-1949 Suriname Expedition (8); Charlesburg (24).

Subclassis Opisthobranchia

Ordo Cephalaspidea

PYRAMIDELLIDAE

**Sayella** (?) **solidula** (C. B. Adams) (fig. 24a, b)

C. B. Adams, 1850: 110 (*Odostomia* s., Jamaica); 109 (*Odostomia ovuloides*, Jamaica) (non vidi).

Clench & Turner, 1950a: 343, pl. 40 fig. 2 (*Odostomia* s.); 322, pl. 40 fig. 4 (*Odostomia ovuloides*).

The present material is assigned with some doubt to the genus *Sayella*, as I have seen only subfossil examples having a non-translucent shell. The extensive material from the shell ridge near Cupido on the Maratakka shows so much variation that I believe *Odostomia ovuloides* to belong to the same species.

Although Abbott's figures (1958: 102, fig. 5, 2a, b) correspond with the holotype of *Chemnitzia laevigata* Orbigny (of which I received a photograph from the BM(NH) through the courtesy of Dr. A. C. van Bruggen), I doubt whether *Odostomia ovuloides* belongs to that species. In the figure given by Clench & Turner of the lectotype of *O. ovuloides* the last and penultimate whorls are higher and there is one whorl less than in Abbott's fig. 5, 2b of *O. laevigata* (Orbigny), although the specimens are about equal in size.

Occurrence in Suriname

Shell ridges. — Cupido (4).

**Odostomia** spec. (fig. 25)

This species seems too broad to be *O. acutidens* (Dall) (1883: 331). The whorls are less convex and the last whorl is more angulated than in *O. gibbosa* Bush (1909: 482) = *O. modesta* Bartsch, non Verrill (Bartsch, 1909: 108, pl. 13 fig. 50). So I prefer to list it as *Odostomia* spec.

Occurrence in Suriname

Shell ridges. — Van Drimmelpolder (2); Cupido (4).

Washed ashore. — Near mouth of Corantijn River (51); sea-dike Nieuw Nickerie (52); beach eastern bank Nickerie River (54); Burnside (between 58 and 59); Totness (59); Coronie beach, eastside (without exact locality); near Popogaimama Creek (65); Bigisanti (88).

**Eulimastoma canaliculatum** (C. B. Adams) (fig. 26a, b)

C. B. Adams, 1850: 109 (*Odostomia canaliculata*, Jamaica) (non vidi).

Clench & Turner, 1950a: 262, pl. 40 fig. 3 (*Odostomia canaliculata*).

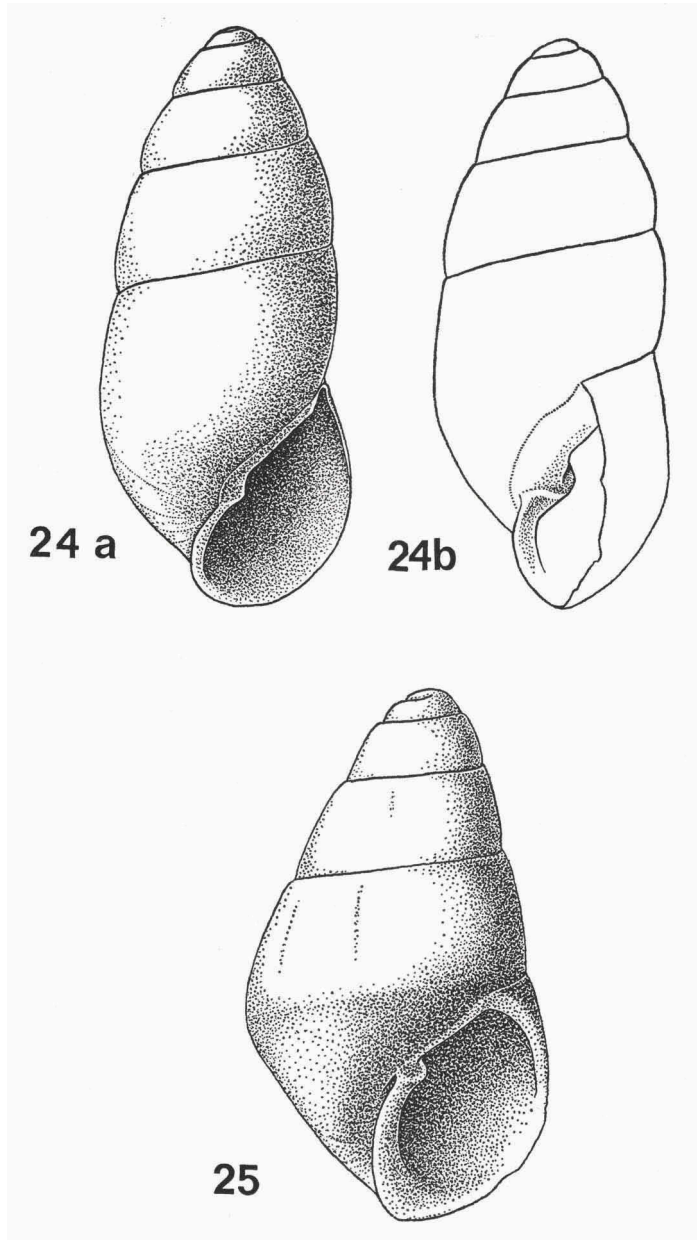


Fig. 24a, b. *Sayella* (?) *solidula* (C. B. Adams), ridge near Cupido on the Maratakka, Nickerie District, [VII 1962], Dr. D. C. Geijskes coll.; height 3.2 mm. Mr. W. Bergmans del.

Fig. 25. *Odostomia* spec., sea-dike near Nieuw Nickerie, Nickerie District, no date, Dr. D. C. Geijskes coll.; height 2.4 mm. Mr. W. Bergmans del.

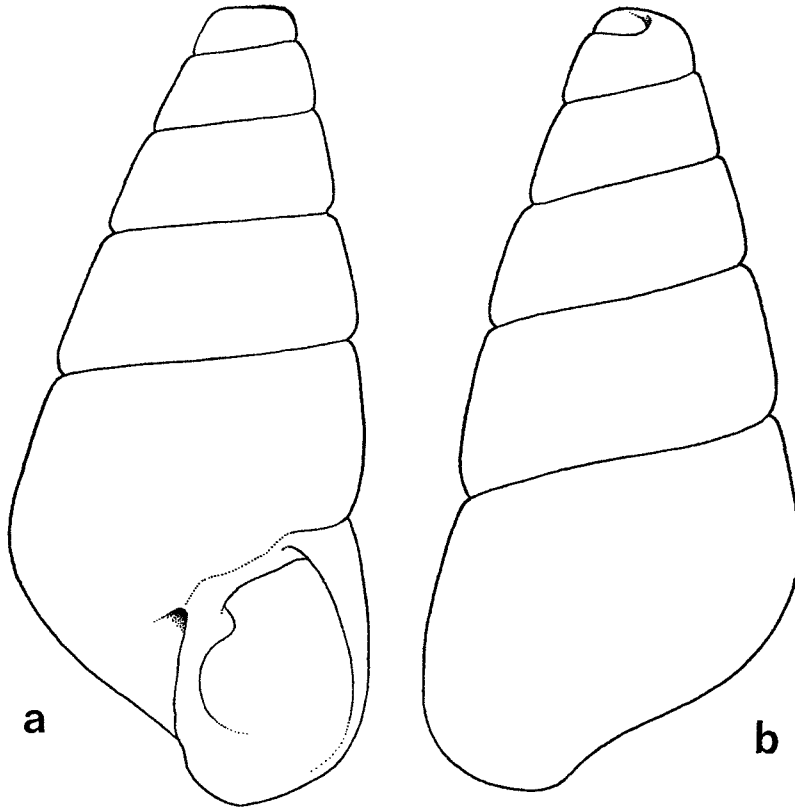


Fig. 26a, b. *Eulimastoma canaliculatum* (C. B. Adams), ridge near Cupido on the Maratakka, Nickerie District, 25 VII 1962, Dr. D. C. Geijskes coll.; height 1.9 mm. Mr. W. C. G. Gertenaar, del.

This species I have placed in *Eulimastoma*, following Odé & Speers (1972: 14, fig. 12).

Occurrence in Suriname

Shell ridges. — Cupido (4).

***Eulimastoma engonium surinamense* nov. subsp. (fig. 27)**

[Bush, 1885b: 446 (*Odostomia engonia*, off Cape Hatteras); 467, pl. 45 fig. 9 (*Odostomia engonia* var. *teres*, off Cape Hatteras)].

Holotype. — Washed ashore near Popogaimama Creek, Saramacca District, Suriname, 11 VI 1959, Dr. D. C. Geijskes coll.

Paratypes. — Shell ridges: near Cupido on the Maratakka, 1 spec.; Coronieweg, picket 217, 2 spec. — Washed ashore:  $\pm$  750 m from freshwater canal near Totness, 4 spec.; near Popogaimama Creek, 18 spec.; near Matapica Canal, 4 spec.; Bigisanti, 3 spec. — All from Suriname.



Description. — The holotype measures  $3.2 \times 1.1$  mm and has  $6\frac{1}{2}$  visible whorls; the largest paratype, from Popogaimama Creek, has a height of 3.8 mm and  $7\frac{1}{4}$  visible whorls.

Shell white; protoconch raised at an angle of about  $45^\circ$  to the axis of the shell; transition from protoconch to teleoconch not clearly visible. Whorls of the teleoconch, after a slight shoulder, straight to the periphery, at which point, after a faint keel, they are bent inward. There is a ridge under the periphery from about the third whorl onward and, moreover, mostly a spiral groove below this ridge, which becomes more and more visible from the penultimate whorl onward. Sculpture consisting of opisthocline, faintly reversed-S-shaped growth lines and very fine spirals of which one or two, just under the periphery, occur sometimes at the last whorl, being more clearly visible than the others. In the holotype, for instance, two of these spirals occur, but these are not shown in the figure.

Base rounded, with hardly visible fine spirals and growth lines, the latter sometimes more conspicuous near the aperture (as in the holotype), representing earlier margins of the aperture. Aperture broadly oval; outer lip thin, after a slight shoulder straight, passing the faint keel, sometimes one or two spirals, the strong ridge and mostly the spiral groove; lower and left side semicircular, thin, at the left side the inner lip revolved, leaving a small umbilicus; palatal side almost straight. No tooth and no ridge on the columella.

Derivatio nominis. — *surinamense*: from Suriname.

Discussion. — This subspecies seems closely related to *Odostomia engonia* Bush and its variety *teres* Bush. The last-mentioned species and its variety are, however, larger (to over 6 mm) and show the spiral ridge only on the last whorl, even in the largest specimens. Moreover it shows sometimes in the nominate form a trace of a tooth and in the variety in one case a distinct tooth. From Dr. H. Odé I got several specimens from the Texas coast which I could not distinguish from the subspecies *surinamense*. He considers this material to be *Eulimastoma teres* (Bush) (= *Odostomia engonia* Bush var. *teres* Bush) which view I can, however, not share.

Through the courtesy of Dr. Willard D. Hartman, of the PMNH at Newhaven I could examine six specimens of *Odostomia engonia* and 13 of the variety *teres*. Of the latter, one specimen (no. 16151) proved to be another species, probably a *Chrysallida*. In both the species and the variety the keel below the periphery is visible only on the last whorl; it is more or less distinct and there is no groove below it. In the typical *O. engonia* three specimens have an indistinct tooth, while two specimens have no tooth; one specimen is pasted on a card so that the aperture is invisible. In the variety

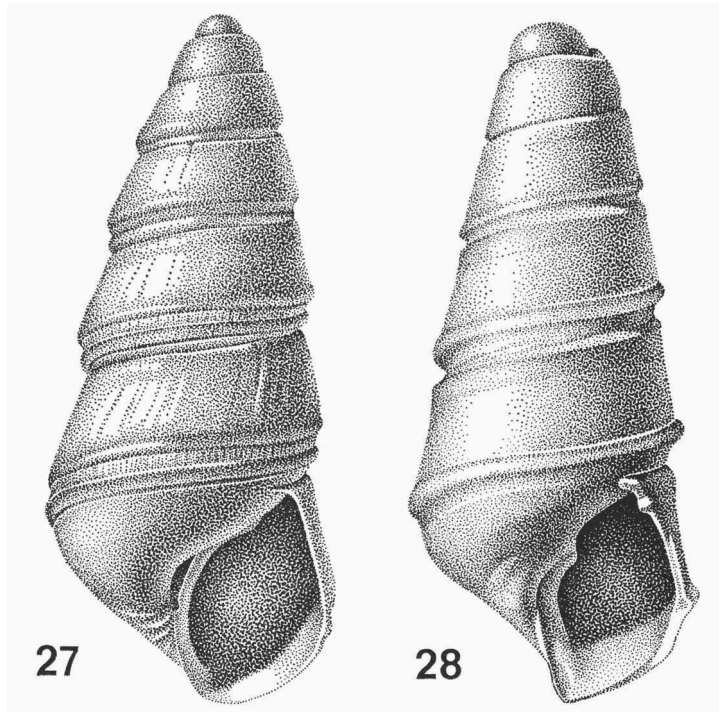


Fig. 27. *Eulimastoma engonium surinamense* nov. subsp., holotype, beach near Popogaimama Creek, Saramacca District, 11 VI 1959, Dr. D. C. Geijskes coll.; height 3.2 mm. Mr. W. C. G. Gertenaar del.

Fig. 28. *Eulimastoma weberi* (Morrison), drill hole Alliance 28, Commewijne District, 15.00 m under surface, no date, Geological Survey Suriname coll.; height 1.9 mm. Mr. W. C. G. Gertenaar del.

*teres* one specimen has a distinct tooth, but 11 specimens have no tooth; in two of these the right margin of the aperture is broken off, but no trace of a tooth is to be seen.

#### Occurrence in Suriname

Shell ridges. — Cupido (4); Coronieweg, picket 216 and 217 (8).

Washed ashore. — Burnside (between 58 and 59); Totness (59); near Popogaimama Creek (65); near Matapica Canal (84); Bigisanti (88).

#### ***Eulimastoma weberi*** (Morrison) (fig. 28)

Morrison, 1965: 221, fig. 3 (*Odostomia w.*, small bay N of Bayou Chene Fleur, northern part of Barataria Bay, Louisiana).

Odé & Speers, 1972: 13, fig. 7.

The best preserved specimen is figured; it measures 1.9 × 0.8 mm. First whorl raised at an angle of about 45° to the axis of the shell; protoconch

consisting of slightly more than one visible whorl, well separated from the teleoconch, which has slightly more than four whorls; aperture with a distinct tooth. The two other specimens are practically identical, only more or less worn. I have followed Odé & Speers in placing this species in *Eulimastoma*.

As the three specimens possess a distinct tooth whereas the holo- and paratypes show no trace of it, the identification remains doubtful. They are treated as *E. weberi*, because only three specimens are available and I can not judge about their variability.

Occurrence in Suriname

Drill holes. — Alliance 28 (44): 15.00 m below surface.

Washed ashore. — Near Popogaimama Creek (65).

***Egila* (?) *virginiae* nov. spec. (fig. 29a, b)**

Holotype. — Washed ashore near Popogaimama Creek, Saramacca District, Suriname, 11 June 1959, Dr. D. C. Geijskes coll.

Paratypes. — Drill holes: Alliance 28, 15.00 m below surface, 8 spec.; 16.25 m below surface, 1 spec. — Shell ridges: near Cupido on the Maratakka, 1 spec.; Kerkplein, Paramaribo, 5 spec. — Washed ashore: about 12 km NE of Nieuw Nickerie, 2 spec.; about 725 m W of canal near Totness, 3 spec.; Hermina flat, 2 spec.; near Popogaimama Creek, 73 spec.; near Matapica Canal, 1 spec.; Bigisanti, 2 spec. — All from Suriname.

Description. — The holotype measures  $2.2 \times 1.0$  mm (fig. 29a); a specimen from Kerkplein  $1.7 \times 1.0$  mm (fig. 29b) and one of the largest specimens from Popogaimama Creek  $2.4 \times 1.0$  mm.

Shell white. Transition between protoconch and teleoconch not well marked. I consider, therefore, the protoconch to end where the knobs at the upperside of the whorls begin. The protoconch then has one visible whorl which is raised at an angle of about  $45^\circ$  to the axis of the shell.

Teleoconch with four whorls in the holotype, in the specimen of 2.4 mm high it has  $4\frac{1}{2}$  whorls. Whorls shouldered, straight or somewhat concave; the knobs at the upper side of the first whorl soon stretched out to opisthocline, faintly reversed-S-shaped axial ribs; knobs also at the underside, forming at the upper- and underside a more or less knobbed ridge. In the specimen from Kerkplein (fig. 29b) this ridge has, at the underside of the last whorl, a very narrow channel in which the axial ribs show very faintly and which is to be seen, more or less distinctly, in some other specimens as well. In well preserved specimens very indistinct spirals are noticeable between the axial ribs. Approximately from the second or third whorl of the teleoconch onward the whorls are constricted toward the suture below the lowermost ridge.

Base of the last whorl with fine spirals and an umbilical slit. Aperture oval, shouldered; palatal margin after a shoulder almost straight, after that semi-

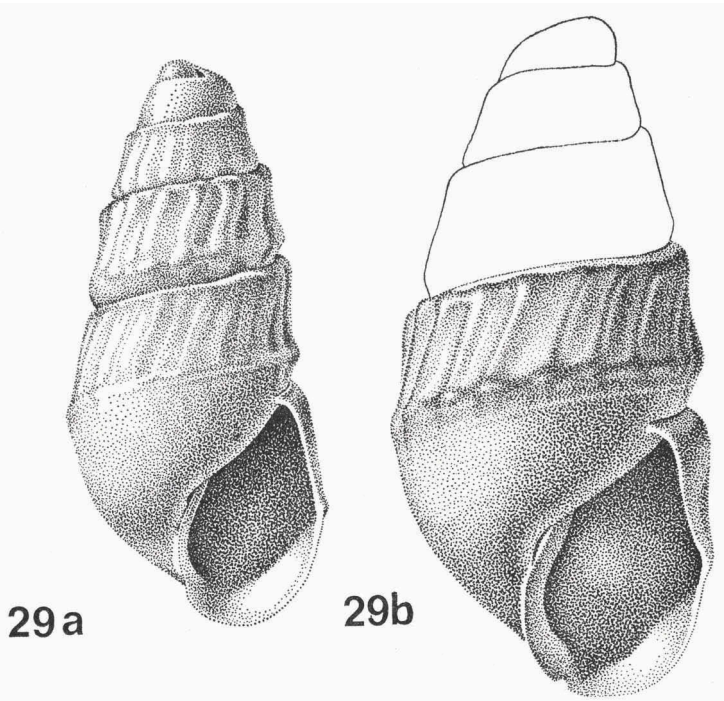


Fig. 29a, b. *Egila* (?) *virginiae* nov. spec.; a: holotype, beach near Popogaimama Creek, Saramacca District, 11 VI 1959, Dr. D. C. Geijskes coll.; height 2.2 mm; b: paratype, shell ridge at Kerkplein, Paramaribo, Suriname District, 26 X 1950, Dr. D. C. Geijskes coll.; height 1.7 mm. Mr. W. C. G. Gertenaar del.

circular, at the columella revolved partly over the umbilical slit; parietal side almost straight. Tooth not visible in frontal view, opposite the umbilical slit and continuing as a small ridge along the columella.

Derivatio nominis. — Named after Mrs. Virginia Orr-Maes, Academy of Natural Sciences, Philadelphia, who was so kind as to identify most of my Turridae.

Discussion. — I have been unable to find a closely related species and even do not know with certainty in which genus to place it. It is somewhat alike *Odostomia* (*Egila*) *poppei* Bartsch<sup>1)</sup> (Dall & Bartsch, 1909: 170, pl. 19 fig. 3), but *O. poppei* has a channel at the periphery and the ribs extend to the umbilical region. In *Egila typica* Laseron (1959: 221, fig. 107) the channel at the suture is less wide, but the ribs also extend below the channel.

1) Dall states in Dall & Bartsch (1909: 3) "the labor of microscopically studying the specimens and preparing the manuscript of this paper is the work of the junior author, to whom credit should be given."

These are distinguishing characters of the (sub)genus *Egila*. *Odostomia* (*Besla*) *convexa* Carpenter (Dall & Bartsch, 1909: 135, pl. 13 fig. 4) has faintly reversed-S-shaped ribs, but it is still more unlike the new species.

Occurrence in Suriname

Drill holes. — Alliance 28 (44), 15.00 and 16.25 m below surface.

Shell ridges. — Cupido (4); Tambaredjo (13); Kerkplein (25).

Washed ashore. —  $\pm$  12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Hermina flat (63); near Popogaimama Creek (65); near Kat Creek (82); near Matapica Canal (84); Bigisanti (88).

**Miralda robertsoni** nov. spec. (fig. 30a, b)

Holotype. — Shell ridge near Cupido on the Maratakka, Nickerie District, Suriname, 25 July 1962, Dr. D. C. Geijskes leg.

Paratypes. — Drill holes: Alliance 28, 16.25 m below surface, 4 spec. — Shell ridges: near Cupido on the Maratakka, 49 spec. — All from Suriname. — Washed ashore: Itapoa, 30 miles of Bahia, Brazil, September 1951, F. Kalff leg., 2 spec.

Description. — The holotype measures  $1.7 \times 0.8$  mm and has  $4\frac{1}{3}$  whorls (fig. 30a, b); a broad specimen  $1.9 \times 1.0$  mm and  $4\frac{1}{2}$  whorls; a long slender specimen  $2.1 \times 0.9$  mm and 5 whorls.

Shells thin, those from Suriname subfossil and without colour markings; those from Brazil white and transparent. The first whorl raised at an angle of about  $45^\circ$  to the axis of the shell; transition of protoconch to teleoconch not well marked. In well preserved specimens the sculpture begins on the second half of the first whorl with a spiral keel slightly below the middle, soon followed by spiral keels above and below this one and then followed on their turn by fine axial ribs. From the second whorl onward the whorls are shouldered, convex and there are three strong spiral keels, of which the uppermost is placed at some distance from the suture while the undermost is near to it. The many fine axial ribs, more or less semicircular and protractive above, form sometimes minute knobs on the keels, but are much narrower and far less protruding than these keels. On the last whorl a small spiral keel is visible between the uppermost and middle keel.

Base of the last whorl rounded, with six spiral keels diminishing in strength and crossed by axial ribs. There is an umbilical split. Aperture oval; outer lip after the shoulder about straight, passing into a semicircular and then into an almost straight, somewhat revolved, margin; parietal side almost straight. Tooth hardly seen from in front and continuing as a small ridge along the pillar.

Derivatio nominis. — Named after Dr. R. Robertson who, during my short stay in Philadelphia in 1963 and ever since, has been very helpful to me.

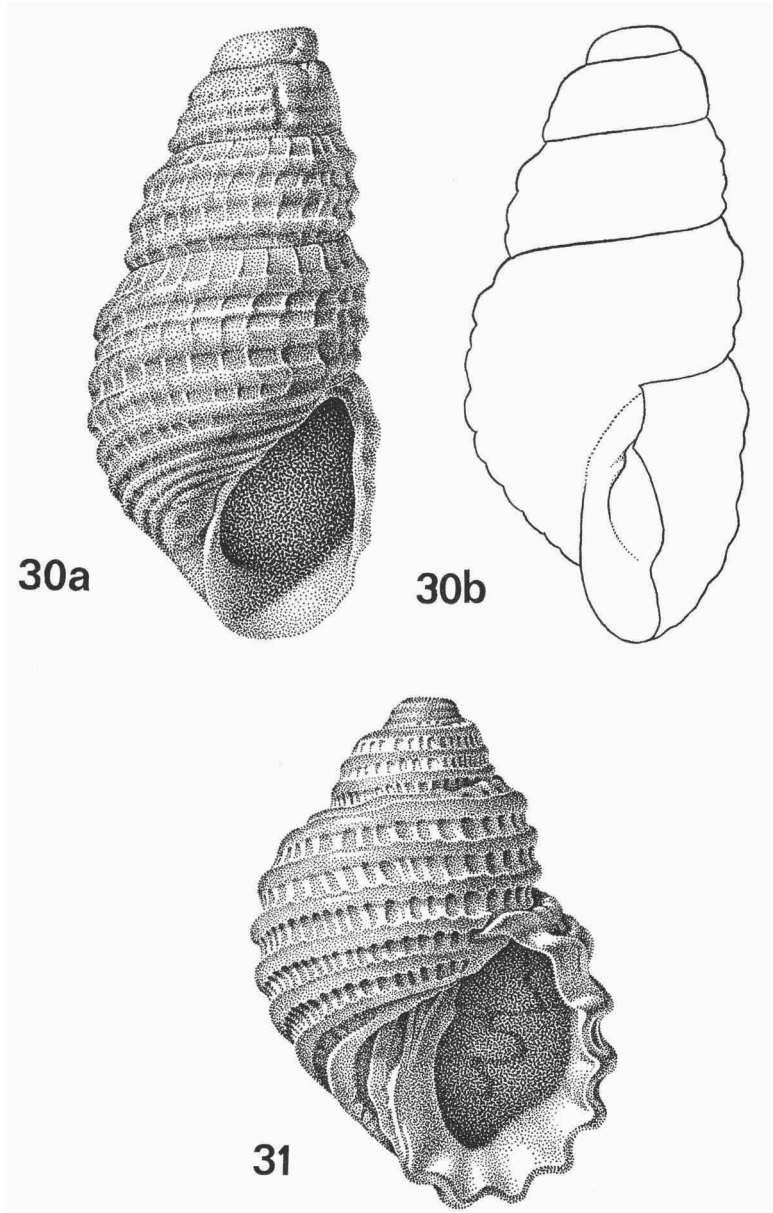


Fig. 30a, b. *Miralda robertsoni* nov. spec., holotype, ridge near Cupido on the Maratakka, Nickerie District, VII 1962, Dr. D. C. Geijskes coll.; height 1.7 mm. a: Mr. W. C. G. Gertenaar del. b: Mr. W. Bergmans del.

Fig. 31. *Phasianema (Iselica) anomalum* (C. B. Adams), beach at E side mouth of Nickerie River, Nickerie District, 3 VII 1949, Dr. D. C. Geijskes coll.; height 4.1 mm. Mr. W. C. G. Gertenaar del.

Discussion. — The species seems to be related to *Miralda abbotti* Olsson & McGinty (1958: 44, pl. 1 fig. 7) from which it is, however, at once distinguished by its three strong keels and also by other characters. In the Eastern Pacific *Odostomia (Iolaea) amianta* Bartsch (Dall & Bartsch, 1909: 182, pl. 20 figs. 8, 8a) is much larger and differs also in other characters.

Occurrence in Suriname

Drill holes. — Alliance 28 (44): 16.25 m below surface.

Shell ridges. — Cupido (4).

**Phasianema (Iselica) anomalum** (C. B. Adams) (fig. 31)

C. B. Adams, 1850: 109 (*Narica* (?) *anomala*, Jamaica) (non vidi).

Clench & Turner, 1950a: 256, pl. 39 fig. 14 (*Narica* (?) *anomala*).

Green & Hill, 1971: Appendix 1, between 85 and 86.

In accordance with Thiele and Wenz, I have classified *Iselica* Dall as a subgenus of *Phasianema* and not of the genus *Fossarus*, as the aperture is furnished in the middle of the left side with a tooth, as in most Pyramidellidae

Occurrence in Suriname

Shell ridges. — Cupido (4); Munderweg and Charlesburg (24).

Washed ashore. — Near mouth of Corantijn River (51); sea-dike of Nieuw Nickerie (52); beach eastern bank of Nickerie River (54);  $\pm$  12 km NE of Nieuw Nickerie (near 57); Totness (59); Coppename Point, little beach near Rozenblad (S of 62); near Popogaimama Creek (65); Braampunt, from wood with *Teredo* (80); near Kat Creek (82); near Matapica Canal (84); Krofajapassie to 9½ km E (86-87½); Bigisanti (88).

**Chrysallida jadisi** (Olsson & McGinty) (fig. 32a, b)

Olsson & McGinty, 1958: 43, pl. 1 figs. 11, 11a (*Odostomia (Chr.) j.*, Bocas Island, Colon).

The specimens from Suriname are all more slender than the original figure of *Chr. jadisi* indicates; a very slender specimen measures 3.0 × 1.1 mm. In the slenderest specimens the underside of the whorls is more or less indicated on the previous whorls and here sometimes the penultimate whorl shows a fifth spiral (fig. 32b). Then it may become alike *Chrysallida communis* (C. B. Adams) (see: *Chemnitzia c.*, Turner, 1956, pl. 10 fig. 5). Also the specimens from Suriname are on the whole smaller than *Chr. jadisi*, although specimens measuring 3.5 mm do occur.

There are two specimens, one from the ridge near Cupido and one washed ashore at Bigisanti, which agree very well with the figure of *Chrysallida seminuda* (C. B. Adams) (*Jaminia s.*, Clench & Turner, 1950a, pl. 41 fig. 5). However, I have to examine more specimens before I can confidently add this species to the fauna of Suriname.



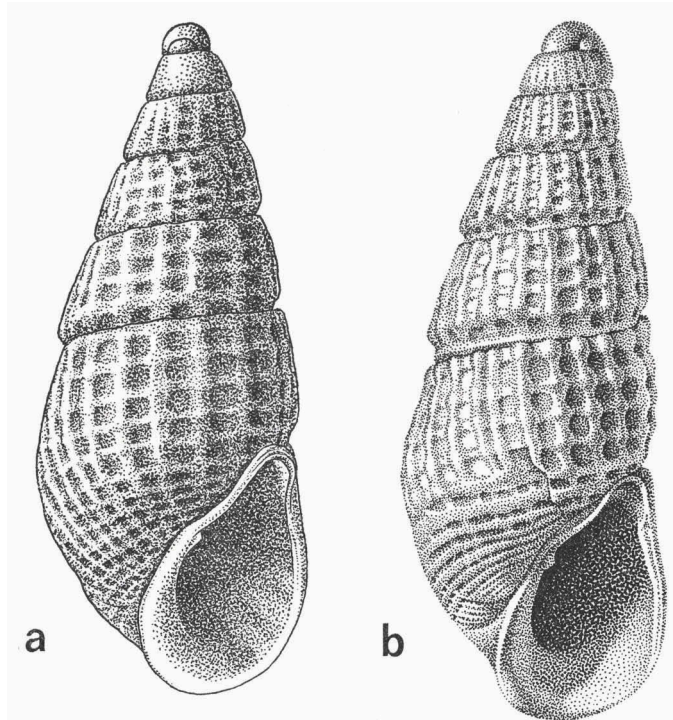


Fig. 32a, b. *Chrysallida jadisi* (Olsson & McGinty); a: beach near Matapica Canal, Commewijne District, V 1948, Dr. D. C. Geijskes coll.; height 2.6 mm. Mr. W. Bergmans del. b: near Popogaimama Creek, 11 VI 1959, Dr. D. C. Geijskes coll.; height 2.3 mm. Mr. W. C. G. Gertenaar del.

Speers & Odé (1972: 7, 8) call these species *Menestho jadisi* and *M. seminuda*. Through the courtesy of Dr. J. Knudsen of the UZM of Copenhagen I received on loan several specimens of the type species of this genus: *Menestho albula* (Fabricius). The largest specimen is 9 mm high, one of the younger specimens is figured here, mainly to show the protoconch (figs. 33a, b). These specimens differ from *Chrysallida jadisi* in two respects: 1) they have only a salient longitudinal sculpture; 2) the protoconch sinks down nearly perpendicular to the first whorl of the teleoconch, instead of having one and a half nearly wholly exposed whorl, with an axis perpendicular to the axis of the shell, above the first whorl of the teleoconch.

Occurrence in Suriname

Drill holes. — Alliance 28 (44): 15.00 m below surface.

Shell ridges. — Van Drimmelpolder (2); Cupido (4); ? Vierde Rijksweg (20).

Washed ashore. — East side of mouth Nickerie River (54);  $\pm$  12 km



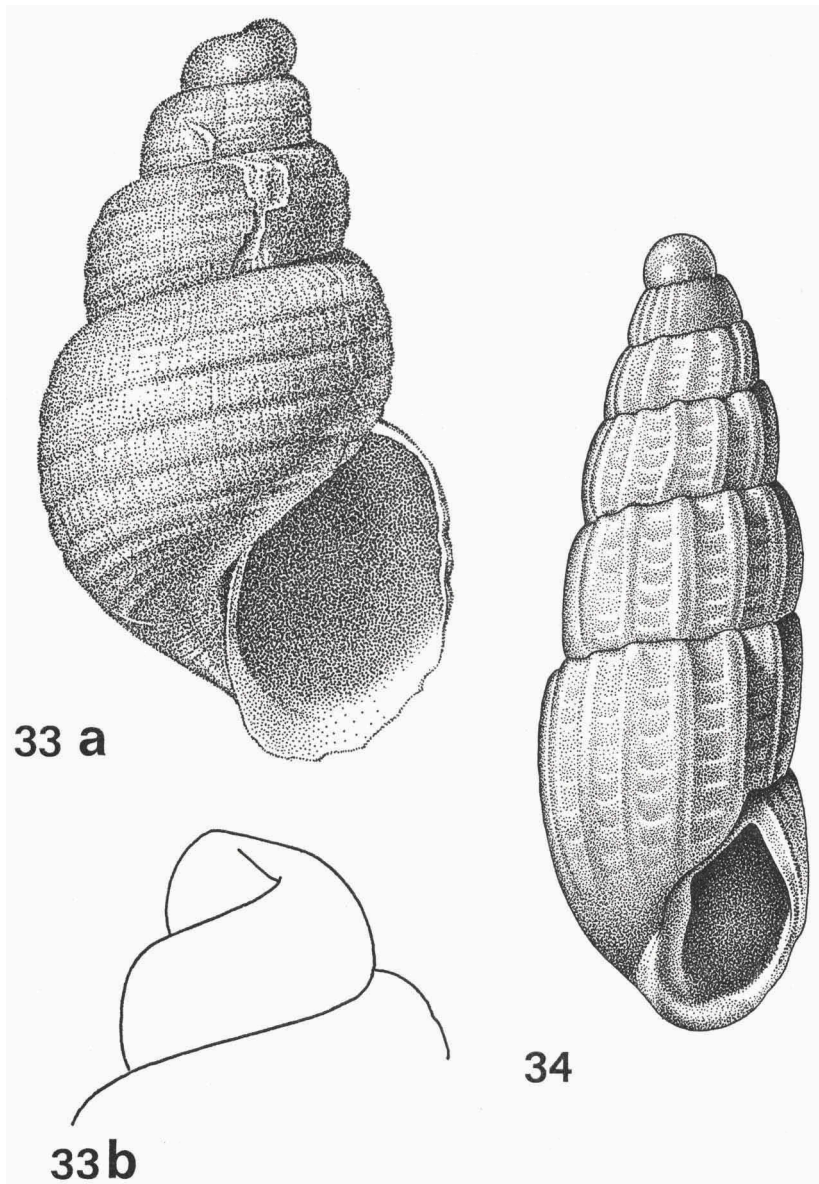


Fig. 33a, b. *Menestho albula* (Fabricius), Jan Mayen, 50-60 [Danish] fms.<sup>1)</sup>, Sören Jensen coll.; height 2.5 mm; b: top enlarged. Mr. A. Bos del.  
 Fig. 34. *Pyrgiscus* spec., ridge Tambaredjo, Saramacca District, 12 II 1957, Dr. D. C. Geijskes coll.; height 3.0 mm. Mr. W. C. G. Gertenaar del.

1) The Danish fathom is 1.88 m, slightly more than the English which is 1.85 m. Dr. J. Knudsen of the UZM was so kind as to give me this information.

NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); Hermina flat (63); near Popogaimama Creek (65); E of Gandoe Creek (68); near Kat Creek (82); near Matapica Canal (84); Bigisanti (88).

**Pyrgiscus** spec. (fig. 34)

The three specimens from the shell ridge near Cupido are scalariform; the largest one is 3.6 mm high (+ ? mm because the aperture is partly broken off); it has a protoconch of about two whorls and a teleoconch of about six whorls. The figured specimen is 2.9 mm high, the protoconch is of the same shape and it has a teleoconch of about five whorls. The specimens from Stations 197 and VRA 11 have the same type of protoconch, but the whorls at the upper side have slightly larger spirals and slightly greater distances between them. It is doubtful whether it is the same species.

Occurrence in Suriname

Shell ridges. — Cupido (4); Tambaredjo (13).

Dredged off the coast. — Stations 197 (6°22.5' N 55°10' W) from tubes of *Diopatra cuprea* (Bosc), VRA 11 (off 3 miles E to 6 miles W of light-ship) on shells; 11-(17-18) fms.

**Turbonilla (Strioturbonilla)** spec. (fig. 35)

The figured specimen is the highest: 4.25 mm; it has a protoconch of about one and a half whorl and a teleoconch of somewhat more than nine whorls. Some of the spirals in certain light appear to be stronger than the others.

Occurrence in Suriname

Drill holes. — Alliance 28 (44): 16.25 m below surface.

Shell ridges. — Cupido (4).

Washed ashore. — Hermina flat (63); near Popogaimama Creek (65).

Dredged off the coast. — Station E3 (NNW of Marowijne River, ca. 30 miles off the coast); 20 fms. or less.

**Turbonilla (Chemnitzia)** spec. (fig. 36)

The highest specimen, from Tambaredjo, is 4.5 mm; it has a protoconch of more than two whorls and a teleoconch of about 8¼ whorls. The figured specimen is 3 mm long.

Occurrence in Suriname

Shell ridges. — Tambaredjo (13).

Washed ashore. — Totness (59); near Popogaimama Creek (65).

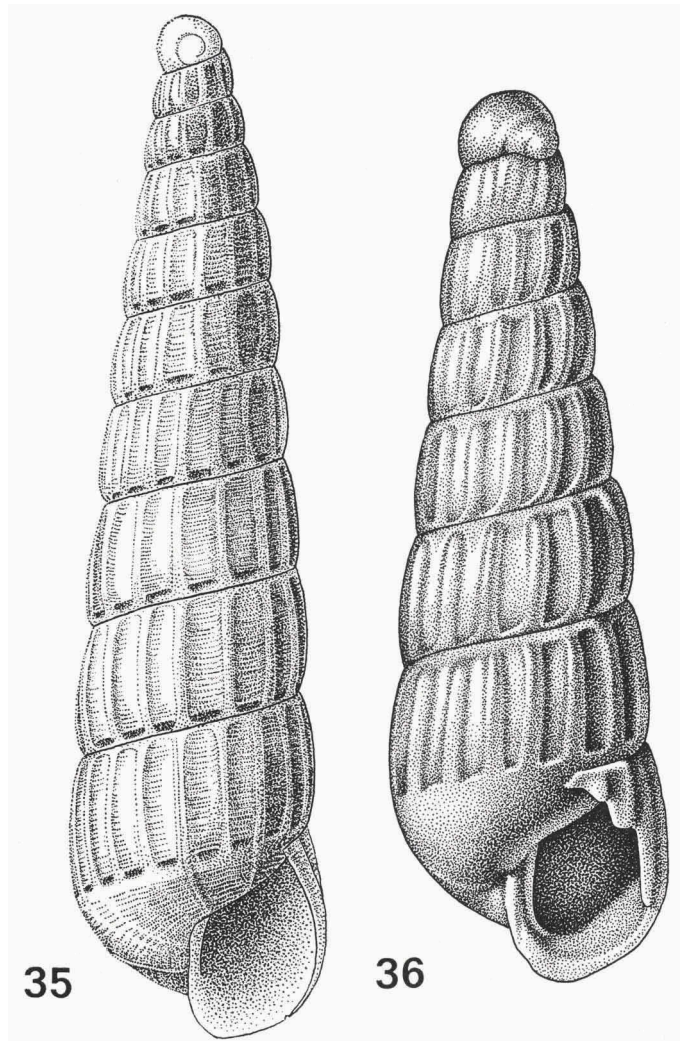


Fig. 35. *Turbonilla (Strioturbonilla)* spec., beach near Popogaimama Creek, Saramacca District, 11 VI 1959, Dr. D. C. Geijskes coll.; height 4.2 mm. Mr. W. Bergmans del.  
 Fig. 36. *Turbonilla (Chemnitzia)* spec., beach near Popogaimama Creek, Saramacca District, 11 VI 1959, Dr. D. C. Geijskes coll.; height 2.9 mm. Mr. W. C. G. Gertenaar del.

#### **Turbonilla** spec.

Specimens without protoconch are mentioned as *Turbonilla* spec.

#### Occurrence in Suriname

Shell ridges. — Van Drimmelpolder (2); Cupido (4); Coronieweg, ridge 430b, washing water pit, and picket 216 and 217 (8); Saramacca, kilometrestone 50 (14); Herenstraat (25).

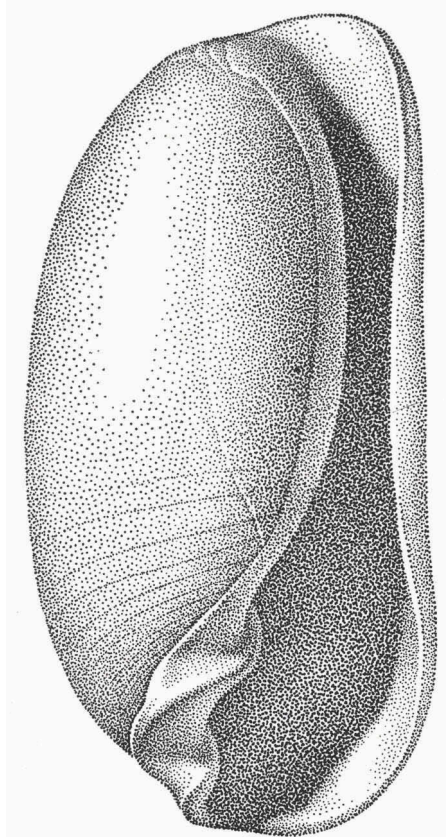


Fig. 37. *Cylichnella buplicata* (Lea), beach Coronie District, 12 VI 1948, Dr. D. C. Geijskes coll.; height 4.0 mm. Mr. W. C. G. Gertenaar del.

Washed ashore. — Near Kweriman Creek (56);  $\pm$  12 km NE of Nieuw Nickerie (near 57); Burnside (between 58 and 59); Totness (59); near Popogaimama Creek (65); near Matapica Canal (84); Bigisanti or environment (88).

#### SCAPHANDRIDAE

### ***Cylichnella buplicata*** (Lea) (fig. 37)

Lea, 1844: 204 (*Bulla b.*, Cape May); 1845: 286, pl. 24 (first time of occurrence, not 26 as stated in text) fig. 2 (*Bulla b.*).

Altena, 1971a: 84, textfig. 6 (*Cylichna b.*).

Green & Hill, 1971: 40 (*Cylichna b.*).

The figure is of a specimen with a very prominent plica.

Occurrence in Suriname

Shell ridges. — Cupido (4); Munderweg (24).

Washed ashore. — Near mouth of Corantijn River (51); beach of sea-dike Nieuw Nickerie (52); beach eastern bank Nickerie River (54);  $\pm$  12 km NE of Nieuw Nickerie (near 57); Coronie beach (no exact locality); Burnside (between 58 and 59); Totness (59); Hermina flat (63); camping site 11/12 VI 1959 (64); near Kat Creek (82); near Matapica Canal (84); Krofajapassie to  $9\frac{1}{2}$  km E (86-87 $\frac{1}{2}$ ); Bigisanti (88); Wiawia beach (89).

**Cylichna (Acrostemma) caelata** Bush (fig. 38)

Bush, 1885b: 468, pl. 45 fig. 15 (off Cape Hatteras).

Slight differences with the figure of Bush are: a spiral under the top which alters the "little curved ribs" into lines which disappear soon, and the spirals at the underside disappear sooner upward.

Occurrence in Suriname

Dredged off the coast. — Station E3 (NNW of Suriname River, ca. 30 miles off the coast); 20 fms. or less. — Station VRA 5 (off the coast of Suriname) from *Murex* spec.; depth unknown.

RETUSIDAE

**Retusa (Utriculastra) canaliculata** (Say) (fig. 39)

Say, 1826: 211 (*V[olvaria]. c.*, coast of South Carolina).

Wells & Wells, 1962: 87, figs. 1, 2, 3, 5, 6.

There is only one specimen; this agrees with one of the figures of Wells & Wells, namely figure 3, but in the specimen from Suriname the upper sides of the last and previous whorls are still more intended than in the specimen in that figure. The protoconch of our specimen is worn.

Occurrence in Suriname

Washed ashore. — Near mouth of Corantijn River (51).

**Volvulella persimilis** (Mörch) (fig. 40)

Mörch, 1875: 179 (*Volvula p.*, M. Antil.).

Marcus, 1960b: 132, figs. 1-6 (*Rhizorus p.*).

Harry, 1967: 136, fig. 4, ?5.

The height of my specimens reaches somewhat more than 6 mm. Those of the shell ridges are worn and have no sculpturation, but especially in the largest specimen (from camping site 11/12 1959) under a binoculair  $\times$  25 sculpturing is very well seen at the underside. Therefore this specimen agrees better with the original description: "Spiraliter subtilissime striata sub lente vix detengenda" than with the description of the shell as given by Marcus (E. & E.).

Occurrence in Suriname



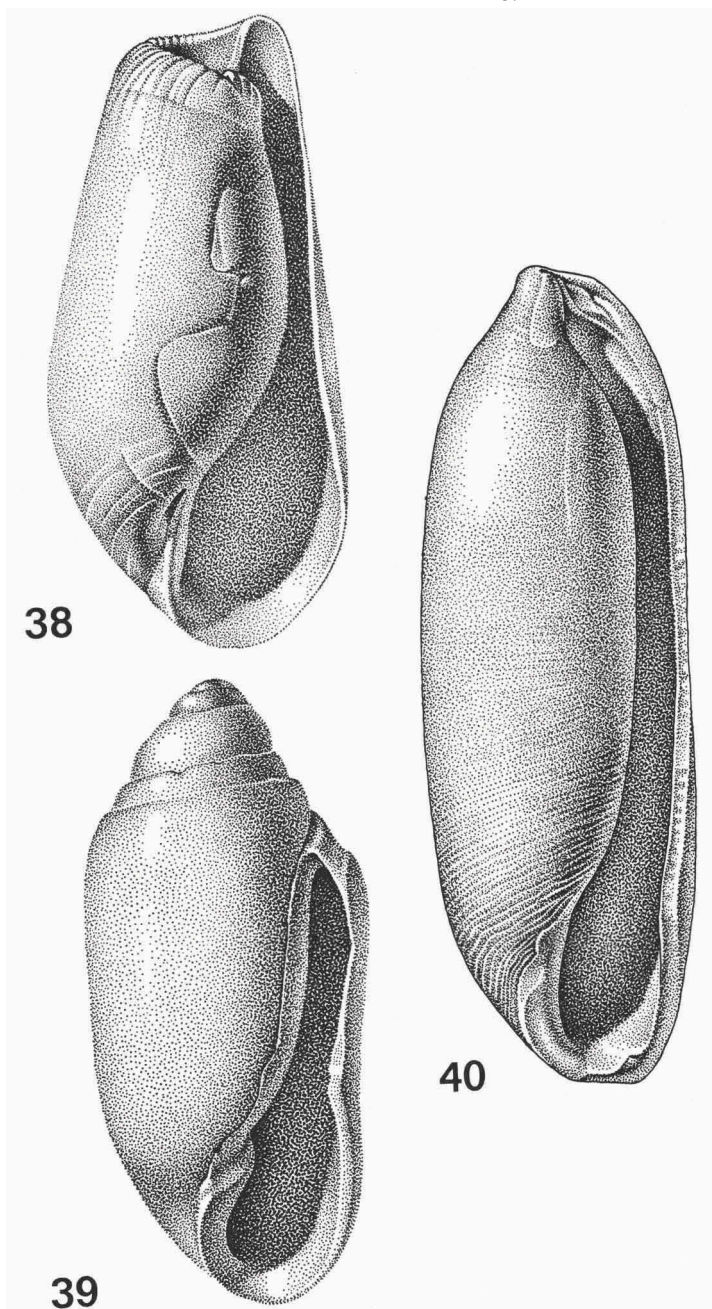


Fig. 38. *Cylichna (Acrostemma) caelata* Bush, Coquette, Station E3, NNW of Marowijne River, ca. 30 miles off the coast, 20 fms. or less, 30 IV-2 V 1957, "Coquette" coll.; height 2.5 mm. Mr. W. C. G. Gertenaar del.

Fig. 39. *Retusa (Utriculostra) canaliculata* (Say), beach near mouth of Corantijn River, Nickerie District, 19 III 1963, Dr. C. O. van Regteren Altena coll.; height 2.8 mm. Mr. W. C. G. Gertenaar del.

Fig. 40. *Volvulella persimilis* (Mörch), beach of  $\pm \frac{2}{3}$  the distance from Suriname River to Coppename Point, Saramacca District, 11 VI 1959, Dr. D. C. Geijskes coll.; height 4.9 mm. Mr. W. C. G. Gertenaar del.

Shell ridges. — Coronieweg, ridge 430b, washing water pit and picket 216 (8); Sniphout (22).

Washed ashore. — Beach eastern bank Nickerie River (54); camping site 11/12 VI 1959 (64).

Dredged off the coast. — Station 197 (6°22.5' N 55°10' W) from tubes of *Diopatra cuprea* (Bosc); 11 fms.

Ordo Notaspidea

PLEUROBRANCHIDAE

**Pleurobranchaea hedgpethi** Abbott

Abbott, 1952: 1, pl. 1 (Port Aransas, Texas).

Nijssen-Meyer, 1965: 143, figs. 1, 2.

The Notaspidea and Nudibranchia were treated by Mrs. Nijssen-Meyer in 1965. No other Mollusca are recorded from this Station and accordingly the latter has no number.

Occurrence in Suriname

Dredged off the coast. — NNW of Marowijne River, 20 miles off the coast; 15 fms.

Ordo Nudibranchia

ARMINIDAE

**Armina muelleri** (Ihering)

Ihering, 1886: 223, pl. 9 fig. 1 (*Pleurophyllidia Müllerii*, Oc. atl. occ.).

Nijssen-Meyer, 1965: 147, fig. 4 (*A. semperi*).

Marcus, 1967: 215 (*A. mülleri*).

See remark under preceding species.

After Mrs. Nijssen-Meyer had identified this specimen as *A. semperi* (Bergh), Marcus (E. & E.), who had more specimens at their disposition, concluded that in fact it belonged to *A. mülleri* (Ihering). In accordance with the International Code of Zoological Nomenclature, Art. 32 (c) (i), I use the spelling *muelleri* instead of *mülleri* for the specific name. The specimen is from Station E3, which is ca. 30 miles (instead of ca. 20 miles) off the coast.

Occurrence in Suriname

Dredged off the coast. — Station E3 (NNW of Marowijne River, ca. 30 miles off the coast); 20 fms. or less.

BORNELLIDAE

**Bornella calcarata** Mörch

Mörch, 1863: 36 (ins. S.-Thomas).

Nijssen-Meyer, 1965: 146, fig. 3.

See remark under *Pleurobranchaea hedgpethi* Abbott.

Occurrence in Suriname

Dredged off the coast. — Station F1 (N of Suriname River, 20 miles off the coast); 15 fms.

Occurrence in the other Guianas

Dredged off the coast. — French Guiana, Station 89 (5°50.5' N 53°03' W); 17 fms.

Subclassis Pulmonata

Ordo Basommatophora

ELLOBIIDAE

**Melampus (Detracia) paranus** (Morrison) (fig. 41)

Morrison, 1951: 19, fig. 3 (*Detracia parana*, Amazon River at Pará, Brazil).

Marcus, 1965a: 42, pl. 5 figs. 19-21, pl. 6 figs. 23-25 (*Detracia parana*).

Occurrence in Suriname

Living (!) or washed ashore. — Sea-dike of Nieuw Nickerie (52); bank of Nickerie River south of Nieuw Nickerie (!, 53); Boskamp near Coppenname Point (62); Purmerend (!, 70); near mouth of Sommeldijkse Creek (!, near 73); Combé (73); ditches of fortress of Nieuw Amsterdam (!, 77).

**Melampus (Melampus) coffea** (L.) (pl. 8 fig. 8)

Linnaeus, 1758: 729 (*Bulla c.*, no locality).

Schepman, 1887: 156.

Vernhout, 1914: 24.

Graham, 1955: pl. 2 fig. 14 (salt marsh snail).

Marcus, 1965a: 20, pl. 1-4, pl. 5 figs. 17, 18 (*M. coffeus*).

Green & Hill, 1971: 41, pl. 3 fig. 24.

*Coffea* is a substantive and so it is *M. coffea*. Dr. Th. W. Reijenga found this species and *Ellobium pellucens* (Menke) at  $\pm 2\frac{1}{2}$  km S of locality 82, which is the most landinward locality so far known.

Occurrence in Suriname

Drill holes. — Hole V6-312, 16-20 ft. (42).

Shell ridges. — Stalweide (1); Cupido (4); Post Groningen (34, Schepman); Anna Catharina (34, Schepman).

Living (!) or washed ashore. — Nickerie (Voltz, ten Kate); near mouth of Corantijn River, from wood (!, 51); sea-dike of Nieuw Nickerie (52); bank of Nickerie River south of Nieuw Nickerie (!, 53); beach eastern bank Nickerie River (!, 54);  $\pm 12$  km NE of Nieuw Nickerie (near 57); Coronie beach (no exact locality); Burnside (between 58 and 59); Totness (59); Hermina flat (63); Purmerend (!, 70); environment of Paramaribo (van Heurn); Plantation Resolutie (78); Braampunt (80); near Kat Creek (82); swamp under parwa-wood S of the sluice at a ridge in Kat Creek (!,  $\pm 2\frac{1}{2}$  km S of 82); near Matapica Canal (!, 84); Halet (85); Krofaja-



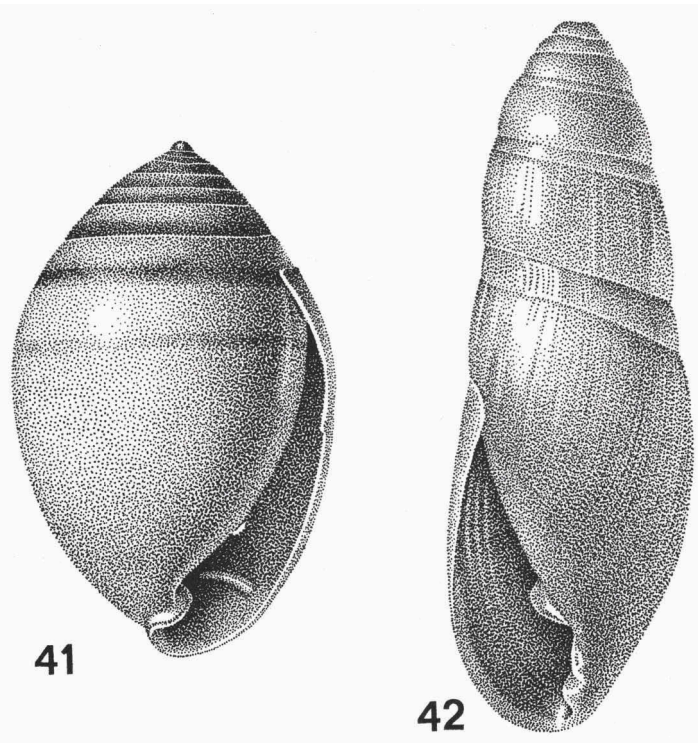


Fig. 41. *Melampus (Detracia) paramus* (Morrison), S of Nieuw Nickerie, bank Nickerie River, Nickerie District, between mouldered wood, I 1968, Mr. W. J. M. Maassen coll.; height 5.1 mm. Mr. W. C. G. Gertenaar del.

Fig. 42. *Blauneria heteroclita* (Montagu), beach near mouth of Corantijn River, Nickerie District, from wood, 19 III 1963, Dr. C. O. van Regteren Altena coll.; height 4.0 mm. Mr. W. C. G. Gertenaar del.

passie to  $9\frac{1}{2}$  km E (!, 86-87 $\frac{1}{2}$ ); Bigisanti (88); Wiawia coast (89); Galibi (93).

Occurrence in the other Guianas

Living. — Guyana (Graham).

***Blauneria heteroclita*** (Montagu) (fig. 42)

Montagu, 1808: 169 (*Voluta H.*, Dunbar).

Vernhout, 1914: 25.

Marcus, 1965b: 438, pl. 4, 5.

Some specimens are found in driftwood near the mouth of the Corantijn River.

Occurrence in Suriname

Living (!) or washed ashore. — Nickerie (Voltz); near mouth of Corantijn River (!, 51); near Popogaimama Creek (65); Toniholo (67); near Matapica Canal (84).

**Ellobium pellucens** (Menke) (pl. 8 fig. 9)

Menke, 1828: 78 (*Auricula p.*) (non vidi); 1830: 36 (*Auricula p.*), 131 (*Auricula p.*, ad muras, iuxta fossas, prope Demerary, in America meridionali).

Schepman, 1887: 156 (*Auricula p.*).

Vernhout, 1914: 24 (*Auriculastra p.*).

Graham, 1955: pl. 2 fig. 19 (*Auricularia gangetica*).

Marcus, 1965b: 426, pl. 1-3.

Green & Hill, 1971: 41, pl. 3 fig. 23.

Occurrence in Suriname

Shell ridges. — Nickerie (Schepman); Nieuw Nickerie, in clay dug out, subfossil? (near 53); van Drimmelpolder (2); Cupido (4).

Living (!) or washed ashore. — Nickerie (ten Kate); near mouth of Corantijn River (51); end sea-dike Nieuw Nickerie, under branches and wrack-wood (!, 52); bank of Nickerie River south of Nieuw Nickerie (!, 53); beach eastern bank Nickerie River (!, 54); Coronie beach (no exact locality); Burnside (between 58 and 59)); Totness (59); Boskamp near Coppename Point (62); end of Fernandez Road (!, 69); environment of Paramaribo (van Heurn); ditches of fortress Nieuw Amsterdam (!, 77); Braamspunt, beach and from wood with *Teredo* (80); swamp under parwa-wood S of sluice at a ridge in Kat Creek (!,  $\pm 2\frac{1}{2}$  km S of 82); near Matapica Canal (84); Krofajapassie to  $9\frac{1}{2}$  km E (!, 86-87 $\frac{1}{2}$ ); Bigisanti (88).

Occurrence in the other Guianas

Living. — Walls at ditches near Demerara, Guyana (Menke); Guyana (Graham).

Classis Cephalopoda

Ordo Decapoda

SPIRULIDAE

**Spirula spirula** (L.)

Linnaeus, 1758: 710 (*Nautilus Sp.*, in America).

Green & Hill, 1971: 85, pl. 11 fig. B.

Occurrence in Suriname

Washed ashore. — Krofajapassie to  $9\frac{1}{2}$  km E (86-87 $\frac{1}{2}$ ); Bigisanti (88).

This is the only cephalopod so far recorded as having been washed ashore in Suriname. Dr. G. L. Voss, Institute of Marine Science, Miami, Florida, is completing a manuscript in which will be treated, among others, the Cephalopoda dredged off the coast of Suriname. His paper will be published in the near future.

## 3. LIST OF CORRECTIONS OF AND ADDITIONS TO PART II

In Part II of this paper, Zoologische Verhandelingen, 119, 1971, the following corrections and additions should be made:

- P. 4. Line 14 from below should be:  
*Anadara (Anadara) notabilis* (Roeding) [*A. (Diluvarca) n.*] - R - d 20
- P. 4. Line five from below should be:  
*Glycymeris undata* (L.) [*G. americana* (Defrance)] - R - d! 24
- P. 5. Between line two and three from above add:  
*Amygdalum dendriticum* Mergerle von Mühlfeld - - - D! (27)
- P. 5. Line 23 from above should be:  
*Anomia simplex* d'Orbigny b r c! d! 34
- P. 5. Line 14 from below should be:  
*Arcinella arcinella* (L.) - R - d! 41
- P. 5. Line two from below should be:  
*Trachycardium (Trachycardium) isocardia* (L.) - R - d 48
- P. 6. Line 20 from below should be:  
*Semele bellastrata* (Conrad) - - - d 61
- P. 6. Line 14 from below should be:  
*Tagelus (Tagelus) plebeius* ([Lightfoot]) - r c! - 63
- P. 6. Between line 13 and 14 from below add:  
*Tagelus (Mesopleura) divisus* (Spengler) - - C - (63)
- P. 7. Line five from above should be:  
*Chione (Lirophora) paphia* (L.) [*C. (L.) latilirata* (Conrad)] - R - d 71
- P. 7. Line 22 from above should be:  
*Cyrtopleura (Scobinopholas) costata* (L.) - r c! D 78
- P. 7. Between line 14 and 15 from below add:  
*Lyonsia hyalina* (Conrad) - - C - (83)

Pp. 15 (line 16/17 from below), 21 (line 5/6 from above), 23 (line 6 from below), 26 (line 10/11 from above), 37 (line 11 from above), 51 (line 6/7 from below), 57 (line 3 from above), 63 (line 20/21 from below) and 77 (line 4/5 from above) "± 15 km E of Nieuw Nickerie" should be: "± 12 km NE of Nieuw Nickerie (near 57)".

P. 20. Between line eight and nine from above add (to *Anadara notabilis*): Mr. P. Creutzberg found one odd valve on a shell ridge in 1972 (Pl. 10 fig. 1).

P. 20. Between line nine and ten from above add (to *Anadara notabilis*): Shell ridges. — Coronieweg, km 106 (8).

P. 23. Before "Occurrence in Suriname", about midway this page, add (to *Noetia bisulcata*):

Mr. A. J. Spaans collected live specimens just above the low water line at Krofajapassie.

P. 25. Between line one and two from above add (to *Glycymeris undata*): Mr. P. Creutzberg found the species at two localities on the shell ridges in 1972.

P. 25. Between line two and three from above add (to *Glycymeris undata*): Shell ridges. — Coronieweg, km 106 (8); Kwattaweg, ridge behind Gummels (is prolongation of ridge at Charlesburg, 24).

P. 27. Between line five and six from above add:

***Amygdalum dendriticum* Megerle von Mühlfeld**

Chemnitz, 1795: 251, pl. 198 figs. 2016, 2017 (*Mytilus arborescens* (invalid name), Insel Domingo).

Megerle von Mühlfeld, 1811: 69.

One specimen, which was dredged alive, was found in the Suriname Museum by Mr. P. A. Teunissen. The jar contained material dredged by the "Coquette" in 1957, but without exact locality.

Occurrence in Suriname

Dredged off the coast. — Off the coast of Suriname; 30 fms. or less.

P. 34. Before "Occurrence in Suriname", about midway the page, add (to *Anomia simplex*):

Mr. A. J. Spaans found live specimens just above the low water line at Krofajapassie.

P. 43. Between line three and four from above add (to *Arcinella arcinella*): One valve was found on a shell ridge by Mr. P. Creutzberg in 1972 (Pl. 10 figs. 2, 3).

P. 43. Between line four and five from above add (to *Arcinella arcinella*): Shell ridges. — Coronieweg, km 106 (8).

P. 45. On line 19 from below, between Stations A1 and C1, add (to *Eucrassatella antillarum*): A2 (NNW Coppename, 20 miles off the coast),

P. 45. Line 7 from below alter in (with *Crassinella guadelupensis*): Shell ridges. — Coronieweg, km 106 (8); Munderweg and Charlesburg (24).

P. 48. Line 11 from below alter in (with *Crassinella* spec.): Shell ridges. — Munderweg and Charlesburg (24); Blauwgrond (26).

P. 49. Between line one and two from above add (to *Trachycardium isocardia*): A fragment of a valve was found on a shell ridge by Mr. P. Creutzberg in 1972.

P. 49. Between line two and three from above add (to *Trachycardium isocardia*): Shell ridges. — Charlesburg (24).

P. 58. Between lines four and five from above add (to *Macoma constricta*): Mr. A. J. Spaans collected one adult and some young living specimens from mud before the coast, at ca. 5 km W of Oranje Creek.

P. 58. On line 15 from above, before Wiawia coast, add (to *Macoma constricta*): ca. 5 km W of Oranje Creek (between 87 and 88);

P. 61. Instead of lines five to eight from below:

### **Semele bellastrata** (Conrad)

Conrad, 1837: 239, pl. 20 fig. 4 (*Amphidesma b.*, Mobile Point, Alabama).

Altana, 1968: 159 (*S. cancellata*); 1971a: 61 (*S. cancellata*).

Boss, 1972: 20, pl. 6 figs. E, F, pl. 7 fig. C, pl. 8 fig. E, pl. 9, pl. 11 fig. A (*S. bellastrata*).

In 1968 and in 1971b as well, I used the name *Semele cancellata* (Sowerby). This is a nomen nudum, as Sowerby gives no description or figure, and should be replaced by *Semele bellastrata* (Conrad).

P. 63. Line three from above should be:

### **Tagelus (Tagelus) plebeius** ([Lightfoot] (pl. 6 figs. 1-33)

P. 63. Between line 12 and 13 from below add:

### **Tagelus (Mesopleura) divisus** (Spengler) (pl. 10 figs. 4, 5)

Spengler, 1794: 96 (*Solen d.*, fra Ostindien).

One valve was found washed ashore by Mr. P. Creutzberg in 1972.

Occurrence in Suriname

Washed ashore. — Bigisanti (88).

P. 70. Between lines 17 and 18 from below add (to *Chione subrostrata*): Mr. A. J. Spaans found this species living just above the low water line at Krofajapassie.

P. 71. Between line six and seven from below add (to *Chione paphia*): Mr. P. A. Teunissen collected a valve on a shell ridge in 1972 (Pl. 10 figs. 6, 7).

P. 71. Between line five and six from below add (to *Chione paphia*): Shell ridges. — Charlesburg (24).

P. 77. Between line three and four from below add (to *Corbula aequivalvis*): Washed ashore. — ± 12 km NE of Nieuw Nickerie (near 57).

P. 78. Below the end of the page add (to *Cyrtopleura costata*): Dredged off the coast. — Station E3 (NNW of Marowijne River, ca. 30 miles off the coast); 20 fms. or less.

P. 83. Between line 15 and 16 from above add:

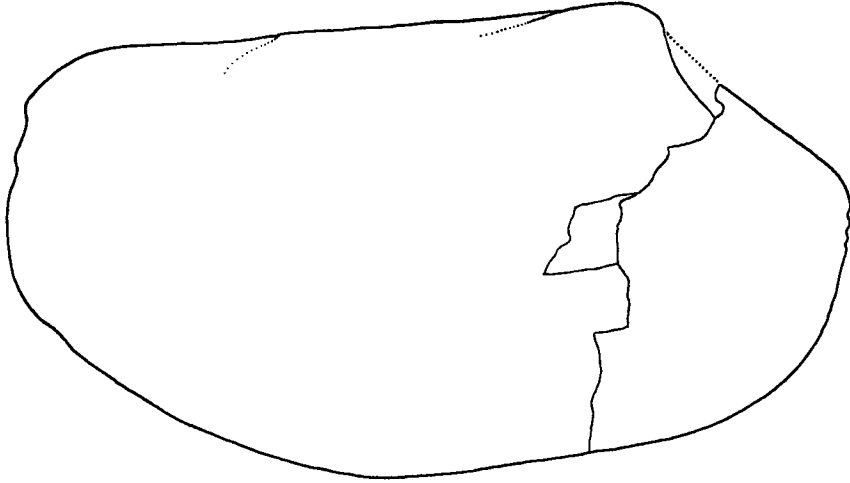


Fig. 43. *Lyonsia hyalina* (Conrad), outer side of left valve, beach at Bigisanti, Marowijne District, 1970, Mr. P. A. Teunissen coll.; length 8 mm. Mr. W. C. G. Gertenaar del.

***Lyonsia hyalina* (Conrad) (fig. 43)**

Conrad, 1831: 261, pl. 11 fig. 12 (*Mya h.*, northern coast of the U.S.).

The only specimen, a left valve found by Mr. P. A. Teunissen in 1970, agrees with the figure of Conrad, 1831, and not with that of *Osteodesma hyalina* ? Conrad (1846; 24, fig. 7) = *Lyonsia floridana* Conrad (1848: 121).

Occurrence in Suriname

Washed ashore. — Bigisanti (88).

The following species which so far had not been found at Bigisanti (88) were found there by Mrs. V. J. Mees and her sons and Mr. P. Staffeleu in 1972. The page numbers are added to each species.

*Nuculara concentrica* (Say), 15; *Anadara ovalis* (Bruguière), 21; *Scapharca chemnitzii* (Philippi), 22; *Mytella charruana* (Orbigny), 26; *Chlamys linki* (Dall), 31; *Anomia simplex* Orbigny, 34; *Crassostrea lacerata* (Hanley) nom. praeocc., 37; *Crassinella* spec., 48; *Mulinia cleryana* (Orbigny), 51; *Tellina punicea* (Born), 56; *T. trinitatis* (Tomlin), 56; *Macoma constricta* (Bruguière), 58; *Petricola pholadiformis gracilis* Deshayes, 73; *Martesia striata* (L.) ?, 80; *Dentalium gouldii colonense* Henderson, 86.

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## Plate 1

Fig. 1, 2. *Neritina virginea* (L.). Front and back side, NE side of shell ridge near Cupido on the Maratakka, [VII 1962], Dr. D. C. Geijskes coll.  $\times 2\frac{1}{4}$ .

Fig. 3, 4. *Neritina zebra* (Bruguière). Front and back side, Bigiston, XI 1967, Mr. W. J. M. Maassen coll.,  $\times 2\frac{1}{4}$ .

Fig. 5. *Neritina zebra* (Bruguière). Bigiston, XI 1967, Mr. W. J. M. Maassen coll.,  $\times 2\frac{1}{4}$ .

Fig. 6, 7. *Neritina zebra* (Bruguière). Outer and inner side of operculum, Bigiston, XI 1967, Mr. W. J. M. Maassen coll.,  $\times 3$ .

Fig. 8. *Littorina scabra angulifera* (Lamarck). Sea-dike near Nieuw Nicke-rie, I 1968, Mr. W. J. M. Maassen coll.,  $\times 1\frac{1}{2}$ .

Fig. 9. *Littorina scabra angulifera* (Lamarck). Gadoholo-Wiawia, on par-watrunk in the surf, V 1945, Dr. D. C. Geijskes coll.,  $\times 2\frac{1}{4}$ .

Fig. 10. *Turritella variegata* (L.). Station A1, off Coronie District, 8-17½ fathoms, 1-4 IV 1957, "Coquette" coll.,  $\times 1\frac{1}{2}$ .

Fig. 11. *Amaea mitchelli* (Dall). Shell ridge near Paramaribo, 1885-1886, Dr. H. ten Kate coll.,  $\times 1\frac{7}{8}$ .

Fig. 12. *Polinices hepaticus* Roeding. Beach of Corantijn River, 19 III 1963, Dr. C. O. van Regteren Altena coll.,  $\times 1\frac{1}{2}$ .

Fig. 13. *Lunatia marochiensis* (Gmelin). Ca. 12 km NE of Nieuw Nicke-rie, s.d., Mr. P. G. E. F. Augustinus coll.,  $\times 2\frac{1}{4}$ .

## Plate 2

Fig. 1, 2. *Natica canrena* (L.). Front and back side, Station E2, NNW of Marowijne River, 30 miles off the coast, 20 fathoms, 30 IV-2 V 1957, "Coquette" coll.,  $\times 1\frac{7}{8}$ .

Fig. 3, 4. *Natica cayennensis* Recluz. Front and back side, beach near Totness, 12 III 1963, Dr. C. O. van Regteren Altena coll.,  $\times 1\frac{1}{2}$ .

Fig. 5. *Cymatium caribbaeum* Clench & Turner. Beach Suriname River, X 1913, Mr. Schimmelpenninck van der Oye coll.,  $\times 2\frac{1}{4}$ .

Fig. 6. *Distorsio clathrata* (Lamarck). Station A1, off Coronie District, 8-17½ fathoms, 1-4 1957, "Coquette" coll.,  $\times 1\frac{1}{2}$ .

Fig. 7. *Distorsio clathrata* (Lamarck). Beach of Corantijn River, 19 III 1963, Dr. C. O. van Regteren Altena coll.,  $\times 2\frac{1}{4}$ .

Fig. 8, 9. *Bursa spadicea* (Montfort). Front and back side, beach near Pogaimama Creek, 11 VI 1959, Dr. D. C. Geijskes coll.,  $\times 1\frac{1}{2}$ .

Fig. 10. *Tonna galea* (L.). Station E3, NNW of Marowijne River, ca. 30 miles off the coast, 20 fathoms and less, 30 IV-2 V 1957, "Coquette" coll.,  $\times \frac{3}{4}$ .

Fig. 11. *Murex pomum* Gmelin. Station "7", off Suriname, 24 fathoms, I IV-22 VII 1957, "Coquette" coll.,  $\times 1\frac{1}{2}$ .

### Plate 3

Fig. 1. *Murex chrysostoma* Sowerby. Braamspunt, 20 VIII 1911, Mr. W. C. van Heurn coll.,  $\times 1\frac{1}{2}$ . Inhabited by *Clibanarius vittatus* (Bosc), Dr. L. B. Holthuis det.

Fig. 2. *Murex brevifrons* Lamarck. Beach near mouth of Suriname River, s.d., Mr. Schimmelpenninck van der Oye coll.,  $\times 1\frac{7}{8}$ .

Fig. 3, 4. *Thais coronata coronata* (Lamarck). Front and back side, Galibi, s.d., ? coll.,  $\times 1\frac{1}{2}$ .

Fig. 5, 6. *Thais coronata trinitatensis* (Guppy). Front and back side, Langamankondre-Christiaankondre, 2/3 III 1963, Dr. C. O. van Regteren Altena coll.,  $\times 1\frac{1}{2}$ .

Fig. 7. *Thais cruentata* (Gmelin). Shell ridge Stalweide, Corantijnpolder, 20 III 1963, Dr. C. O. van Regteren Altena coll.,  $\times 1\frac{1}{2}$ .

Fig. 8. *Thais cruentata* (Gmelin). Ova, beach near Matapica Canal, 27 I 1963, Dr. C. O. van Regteren Altena coll.,  $\times \frac{3}{4}$ .

Fig. 9. *Melongena melongena* (L.). Shell ridge at Indjikondre, 11 III 1963, Dr. D. C. Geijskes coll.,  $\times \frac{3}{4}$ .

### Plate 4

Fig. 1. *Pugilina morio* (L.). End Fernandez Road, on parwa root, alive, XI 1939, Dr. D. C. Geijskes coll.,  $\times \frac{3}{4}$ .

Fig. 2. *Latirus brevicaudatus* (Reeve). Station 250-256, 6°41' N 55°26.5'-55°43' W, 23-24 fathoms, 19 VI 1957, "Coquette" coll.,  $\times 2.1$ .

Fig. 3. *Fusinus closter* (Philippi). Station 250-256, 6°41' N 55°26.5'-55°43' W, 23-24 fathoms, 19 VI 1957, "Coquette" coll.,  $\times \frac{3}{4}$ .

Fig. 4. *Fusinus closter* (Philippi). Station E3, NNW of Marowijne River, ca. 30 miles off the coast, 20 fathoms and less, 30 IV-2 V 1957, "Coquette" coll.,  $\times \frac{3}{4}$ .

Fig. 5. *Fusinus closter* (Philippi). Station "6", off Suriname, 24 fathoms, I IV-22 VII 1957, "Coquette" coll.,  $\times \frac{3}{4}$ .

Fig. 6, 7. *Prunum prunum* (Gmelin). Fore and back side, beach near Matapica Canal, 27 I 1963, Dr. C. O. van Regteren Altena coll.,  $\times 1\frac{7}{8}$ .

Fig. 8, 9. *Knefastia spec.* Front and right side, Station E3, NNW of Marowijne River, ca. 30 miles off the coast, 20 fathoms and less, "Coquette" coll.,  $\times 1\frac{7}{8}$ .

## Plate 5

Fig. 1-4. *Calliostoma jujubinum* (Gmelin). Upper and under side of two fragments, Coronieweg, shell ridge no. 454, XII 1948, Suriname Expedition 1948-1949 coll.,  $\times 8$ .

Fig. 5. *Littorina nebulosa* (Lamarck). Gadoholo-Wiawia, on parwa trunk in the surf, V 1945, Dr. D. C. Geijskes coll.,  $\times 2\frac{1}{2}$ .

Fig. 6. *Littorina flava* King & Broderip. Sea-dike near Nieuw Nickerie, 17 VII 1956, Dr. W. A. Collier coll.,  $\times 3$ .

Fig. 7. *Littorina flava* King & Broderip. Gadoholo-Wiawia, on parwa trunk in the surf, V 1945, Dr. D. C. Geijskes coll.,  $\times 3$ .

Fig. 8-10. *Heliacus bisulcatus* (Orbigny). Upper, under and front side, shell ridge Sniphout at Fernandez Road, s.d., Dr. D. C. Geijskes coll.,  $\times 8$ .

Fig. 11-13. *Architecionica nobilis* Roeding. Upper, under and front side, Station "14", off Suriname, 23 fathoms, IV-VII 1957, "Coquette" coll.,  $\times 2\frac{1}{2}$ .

## Plate 6

Fig. 1. *Epitonium albidum* (Orbigny). Beach of eastern bank Nickerie River, 3 VII 1949, Dr. D. C. Geijskes coll.,  $\times 8$ .

Fig. 2-4. *Epitonium candeanum* (Orbigny). Beach near Popogaimama Creek, 11 VI 1959, Dr. D. C. Geijskes coll.,  $\times 10$ .

Fig. 5, 6. *Epitonium rupicolum* (Kurtz). Shell ridge near Cupido on the Maratakka, 25 VII 1962, Dr. D. C. Geijskes coll.,  $\times 8$ .

Fig. 7. *Eulima bifasciata* Orbigny. Coronieweg, shell ridge no. 430b, washing water pit, XII 1948, Suriname Expedition 1948-1949 coll.,  $\times 8$ .

Fig. 8. *Niso interrupta* (Sowerby). Beach near Popogaimama Creek, 11 VI 1959, Dr. D. C. Geijskes coll.,  $\times 8$ .

Fig. 9, 10. *Calyptraea centralis* (Conrad). Upper and under side, shell ridge at Munderweg, Paramaribo, 1956, Dr. W. A. Collier coll.,  $\times 6$ .

Fig. 11. *Nassarius polygonatus* (Lamarck). Shell ridge near Cupido on the Maratakka, 25 VII 1962, Dr. D. C. Geijskes coll.,  $\times 3$ .

Fig. 12, 13. *Nassa isabellei* Orbigny. Holotype, BM(NH), Reg. no. 1854.12.4. 468, courtesy of Dr. J. D. Taylor,  $\times 10$ .

## Plate 7

Fig. 1, 2. *Clathrodrillia minor* (Dautzenberg). Front and right side, Station 277,  $6^{\circ}42.5' N$   $55^{\circ}31.5' W$ , 24 fathoms, 26 VI 1957, "Coquette" coll.,  $\times 3$ .

Fig. 3, 4. *Cerodrillia* aff. *perryi* Bartsch & Rehder. Front and right side, Station "14", off Suriname, 23 fathoms, IV-VII 1957, "Coquette" coll.,  $\times 3$ .



Fig. 5, 6. *Crassispira affinis* (Reeve). Front and right side, Station "14", off Suriname, 23 fathoms, IV-VII 1957, "Coquette" coll.,  $\times 3$ .

Fig. 7, 8. *Crassispira chazaliei* (Dautzenberg). Front and right side, Station "6", off Suriname, 24 fathoms, IV-VII 1957, "Coquette" coll.,  $\times 3$ .

Fig. 9, 10. *Pyrgospira* cf. *tampaensis* (Bartsch & Rehder). Front and right side, Station 28,  $6^{\circ}48' N$   $54^{\circ}54' W$ , 25 fathoms, 12 V 1957, "Coquette" coll.,  $\times 3$ .

Fig. 11, 12. *Compsodrillia eucosmia* (Dall). Front and right side, Station "6", off Suriname, 24 fathoms, IV-VII 1957, "Coquette" coll.,  $\times 3$ .

Fig. 13, 14. *Compsodrillia haliostrephis* (Dall). Front and right side, Station 29,  $6^{\circ}49' N$   $54^{\circ}54' W$ , 26 fathoms, 12 VI 1957, "Coquette" coll.,  $\times 3$ .

Fig. 15, 16. *Glyphostoma claudoni* (Dautzenberg). Front and right side, Station "2", off Suriname, 23 fathoms, IV-VII 1957, "Coquette" coll.,  $\times 8$ .

#### Plate 8

Fig. 1, 2. *Diodora cayenensis* (Lamarck). Left and under side, "Lek-beteugelingsdam" near the Maratakka, 1972, Mr. P. Creutzberg coll.,  $\times 5$ .

Fig. 3. *Calliostoma adpersum* (Philippi). Station 250-256,  $6^{\circ}41' N$   $55^{\circ}26.5'-55^{\circ}43' W$ , 19 VI 1957, "Coquette" coll.,  $\times 3.4$ .

Fig. 4. *Olivella* cf. *adelae* Olsson. Bigisanti, 1970, Mr. P. A. Teunissen coll.,  $\times 4\frac{1}{2}$ .

Fig. 5. *Buchema hadromeres* (Melvill)? Shell ridge at Charlesburg, 1970, Mr. P. A. Teunissen coll.,  $\times 5\frac{1}{2}$ .

Fig. 6. *Pyrgocythara* spec. Shell ridge at Alliance, 1970, Mr. P. A. Teunissen coll.,  $\times 7\frac{1}{2}$ .

Fig. 7. *Hastula cinerea* (Born). Shell ridge at Charlesburg, 1970, Mr. P. A. Teunissen coll.,  $\times 3.1$ .

Fig. 8. *Melampus coffea* (L.). Beach of eastern side Nickerie River, 20 III 1963, Dr. C. O. van Regteren Altena coll.,  $\times 2.8$ .

Fig. 9. *Ellobium pellucens* (Menke). Nieuw Nickerie, end sea-dike, under branches and wreckage, I 1968, Mr. W. J. M. Maassen coll.,  $\times 2.8$ .

#### Plate 9

Fig. 1. *Knefastia* spec. Topwhorls, Station "1", off Suriname, 2-24 fathoms, IV-VII 1957, "Coquette" coll., much enlarged.

Fig. 2. *Pleurotoma olivacea* Sowerby. Syntype, BM(NH), through the courtesy of Mr. D. L. F. Seeley, much enlarged.

#### Plate 10

Fig. 1. *Anadara notabilis* (Roeding). Shell ridge at Coronieweg, km 106, 1972, Mr. P. Creutzberg coll.,  $\times 1$ .

Fig. 2, 3. *Arcinella arcinella* (L.). Outer and inner side, shell ridge at Coronieweg, km 106, 1972, Mr. P. Creutzberg coll.,  $\times 4$ .

Fig. 4, 5. *Tagelus divisus* (Spengler). Outer and inner side, Bigisanti, 1972, Mr. P. Creutzberg coll.,  $\times 2\frac{3}{4}$ .

Fig. 6, 7. *Chione paphia* (L.). Outer and inner side, shell ridge at Charlesburg, 1972, Mr. P. A. Teunissen coll.,  $\times 2\frac{1}{2}$ .

#### Plate 11

Map of the localities on the shell ridges, along the coast and off the coast to 30 fathoms in Suriname.

On all the plates the measurements are approximately.

