

**New taxa and new records of Indo-Pacific species  
of *Murex* and *Haustellum*  
(Gastropoda, Muricidae, Muricinae)**

by Roland HOUART

**Abstract.** — Some species of *Murex* and *Haustellum* are discussed and have their geographical range extended. One species *Murex protocrassus*, and one subspecies, *Haustellum dentifer coriolis*, are described from New Caledonia, and one subspecies, *Haustellum gallinago fernandesi*, is described from Mozambique.

**Résumé.** — Depuis la révision des espèces indo-ouest Pacifiques de *Murex* et *Haustellum* par PONDER et VOKES (1988), de nombreux spécimens sont parvenus pour étude à l'auteur. Une espèce, *Murex protocrassus*, et une sous-espèce, *Haustellum dentifer coriolis*, sont décrites de la région néo-calédonienne, et une sous-espèce, *Haustellum gallinago fernandesi*, est décrite du Mozambique. Des données nouvelles sur la répartition géographique d'autres espèces sont présentées.

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INTRODUCTION

Since the revision of the Indo-West Pacific species of *Murex* and *Haustellum* by PONDER and VOKES (1988), several range extensions of described taxa, and some new taxa have been made available to the author. Included are some east African species of *Haustellum*, mostly off Mozambique, and species of *Murex* and *Haustellum*, recently dredged in the New Caledonian region, and now housed in the Muséum national d'Histoire naturelle. All species are discussed or described in this paper.

*Abbreviations used in the text*

AMS : Australian Museum, Sydney.  
IRSNB : Institut Royal des Sciences Naturelles de Belgique, Bruxelles.  
MNHN : Muséum national d'Histoire naturelle, Paris.  
NM : Natal Museum, Pietermaritzburg.  
SAM : South African Museum, Cape Town.  
sp(s) : live taken specimen(s); sh(s) : empty shell(s).

*SYSTEMATIC ACCOUNT*

Family MURICIDAE Rafinesque, 1815

Subfamily MURICINAE Rafinesque, 1815

Genus MUREX Linné, 1758

Subgenus *Murex* s.s

**Murex (Murex) protocrassus** n. sp.

(Figs 1-3, 26)

MATERIAL EXAMINED. — Only known from the type material.

TYPE MATERIAL. — Chesterfield, 19°42' S, 158°30' E, 250 m, 21 May 1979, 1 sh., MNHN (paratype); Coral Sea, Chesterfield, R.V. « Coriolis », MUSORSTOM 5, stn 345, 19°40' S, 158°32' E, 305-310 m, BOUCHET, MÉTIVIER & RICHER coll., 16 October 1986, 1 sh., MNHN (holotype); Coral Sea, Chesterfield, R. V. « Coriolis », MUSORSTOM 5, stn 348, 19°36' S, 158°32' E, 260 m, BOUCHET, MÉTIVIER & RICHER coll., 17 October 1986, 1 sh., MNHN (paratype).

TYPE LOCALITY. — Coral Sea, Chesterfield, 19°40' S, 158°32' E, 305-310 m.

DESCRIPTION

Shell medium-sized for the genus, all examined shells partially broken. Length of the holotype of 57 mm. Spire low to moderately high with 1,75-2 protoconch whorls, and 5-6 bulbous and angulate teleoconch whorls. Protoconch rounded, broad and smooth. Suture impressed. Axial ornamentation of first and second teleoconch whorls consisting of 15 low ridges. From third whorl, these ridges change into 3 varices, and 2-3 intervarical low ridges. Presence of numerous, narrow, axial lamellae. Varices ornamented with 3 open spines of which shoulder one longest. Previous whorls with a single short shoulder spine. Last varix with folded webbing between second and third spine, and between third spine and the base of siphonal canal. Spiral sculpture of 3 low cords, joining the varical spines, forming small knobs at the intersection with axial ridges. Presence of 2-3 very low spiral threads, only observable on the varices, otherwise indistinct.

Aperture large and ovate. Columellar lip smooth, erect anteriorly and posteriorly adherent to the shell. Anal notch narrow and deep. Outer lip crenulated and slightly erect. Inner part of outer lip very briefly lirate, otherwise smooth. Siphonal canal long, open, and straight, with apparently (partly broken) 2-3 short, anteriorly bent spines.

Shell whitish with some light brown traces on the spiral cords and dorsal part of spines. Operculum and animal unknown.

#### REMARKS

The new species belongs to what PONDER & VOKES (1988) call the *Murex brevispina* group, consisting of *Murex (Murex) brevispina* with its subspecies *brevispina* Lamark, 1822; *macgillivrayi* Dohrn, 1862; *senilis* Jousseaume, 1874, and *ornamentalis* Ponder & Vokes, 1988. The decision to treat the Chesterfield population as a species instead of a subspecies of *M. (M.) brevispina* is mainly based on the protoconch. The big protoconch of *M. protocrassus* indicates intracapsular larval development, while *brevispina* has an almost five to six times much smaller protoconch, probably indicating lecithotrophic larval development. Other shell differences consist in the more numerous axial ridges of first teleoconch whorls; the more spinose siphonal canal; the fewer spiral cords on last teleoconch whorl, and the presence of numerous axial lamellae.

#### Genus HAUSTELLUM Schumacher, 1817

PONDER & VOKES (1988) used the genus *Haustellum* for species previously assigned to *Murex* s.s. by other workers. This genus includes all species with a non-muscular pallial vas deferens, whereas species of *Murex* s.s. have a muscular tube (PONDER & VOKES, 1988 : 10). Otherwise, as with other genera of the Muricidae, few anatomical differences separate the two genera.

On shell characters, species of *Haustellum* differ from *Murex* s.s. by the absence of the labral tooth and by the fewer or absent varical spines (PONDER & VOKES, 1988). Nevertheless, they can be separated into two distinct groups : the first containing all species with a globose and spineless last whorl, rounded varices, large, roundly-ovate aperture with a raised peristome and projecting inner lip, and a long, slender, spineless (or almost spineless) siphonal canal. This group includes *Haustellum haustellum haustellum* (Linné, 1758) and the two nominal species tentatively synonymised by PONDER & VOKES (1988) [*H. kurodai* (Shikama, 1964) and *H. vicdani* Kosuge, 1980]; *H. haustellum longicaudus* (Baker, 1891); *H. fallax* (Smith, 1901) and *H. wilsoni* D'Attilio & Old, 1971. The second group includes all remaining species without labral tooth but more similar in appearance to *Murex* s.s. or *Siratus* Jousseaume, 1880.

To make the distinction between both "groups" they are considered here as *Haustellum* s.s. and *Haustellum* s.l.

GROUP 1 : *Haustellum* s.s.

***Haustellum haustellum longicaudus* (Baker, 1891)**

(Figs 12-13, 29)

*Murex haustellum* var. *longicaudus* Baker, 1891 : 56.

MATERIAL EXAMINED. — Malajus, Ethiopia, Red Sea, 37-46 m, coll. R. HOUART, 1 sp.; Aden, Abyan shore, Gulf of Aden, Wilhelm-Pieck-Universität, Rostock, DDR, 2 shs; Gulf of Aden, 12°51' N, 45°08' E, 20 m, Wilhelm-Pieck-Universität, Rostock, DDR, 1 sp.; Gulf of Aden, 40-50 m, coll. R. HOUART, 1 sh.

Remarks

PONDER & VOKES (1988 : 90) mentioned the specimen illustrated here in a footnote. This subspecies is different from the nominal subspecies *haustellum* (Linné, 1758) (fig. 31) in having a shell with bulbous protoconch of 2 to 2.5 whorls with heavy and broad terminal varix, only slightly intraspecifically variable in the examined specimens (fig. 29). The spire whorls are more convex, only shallowly shouldered. The axial and spiral sculpture are more delicate and attenuated while the aperture is white. The subspecies is apparently confined in the southern part of the Red Sea and adjacent regions.

The name *H. longicaudus* has been incorrectly applied to specimens usually called *Haustellum kurodai* (Shikama, 1964) from Japan and the Philippine Islands [KAICHER (1973 : card 124); FAIR (1976 : 55, pl. 4, fig. 50); ABBOTT & DANCE (1982, text fig.)].

***Haustellum fallax* (Smith, 1901)**

(Figs 17, 30)

*Murex fallax* Smith, 1901 : 113, pl. 1, fig. 9.

*Haustellum haustellum fallax* (Smith, 1901) : PONDER & VOKES, 1988 : 90, figs 46E, F; 47; table 34.

MATERIAL EXAMINED. — Off Natal, South Africa, coll. R. HOUART, 1 sh; off Cabo das Correntes, north Inhambane, Mozambique, 150 m, coll. C. P. FERNANDES, 1 sh; between Cabo das Correntes and Zavora Point, Mozambique, 150-175 m, coll. R. HOUART, 1 sh.

REMARKS

This species is included here to record a minor geographical range extension. Known before only from off Natal, South Africa, it was considered by PONDER & VOKES (1988 : 90) to be a subspecies of *H. haustellum* (Linné, 1758) (fig. 22). I prefer to treat these taxa as separate species, due to their different larval development (BOUCHET, 1989), planktotrophic for *H. haustellum* (fig. 31) and non-planktotrophic (probably intracapsular) for *H. fallax* (fig. 30).

**Haustellum** sp.  
(Figs 14-16, 32)

MATERIAL EXAMINED. — Dar-es-Salaam, Tanzania, June 1982, coll. R. HOUART, 6 shs; Madagascar (no other data), coll. R. HOUART, 1 sp.; Sinda, Tanzania, 1980 (market), coll. A. LESAGE, 2 shs; Tanzania, 1982, coll. A. LESAGE, 1 sh.

REMARKS

There are apparently 3 populations of *Haustellum* s.s. off Mozambique and possibly 3 different species: *Haustellum haustellum haustellum* (Linné, 1758), *Haustellum fallax* (Smith, 1901) and the *Haustellum* sp. discussed here.

The protoconch of the present shell, consists of 2.5 glossy and smooth whorls, and differs from that of *H. haustellum haustellum* in being more elongate, angulate, and apparently non-carinate (only one protoconch examined). The shell is quite easy to differentiate: the two or three intervarical axial ribs are heavy and broad; the spiral threads are shallow and the siphonal canal is smooth. It has a whitish aperture with light yellow or pink traces on the inner lip and on the lirations of the inner side of the outer lip; the shell is darker coloured than in *H. haustellum*, with bluish-black blotches on whorls and siphonal canal. It is also different from *Haustellum haustellum longicaudus* (Baker, 1891) [and from other forms synonymised by PONDER & VOKES (1988) with *H. haustellum haustellum* (Linné, 1758): *H. kurodai* (Shikama, 1964) and *H. vicdani* Kosuge, 1980], being separated by its broad and heavy intervarical ridges, a character which recalls *H. fallax*. It can be separated from *H. fallax* by its different protoconch (compare figs 32 and 30), smooth siphonal canal, coloured aperture and different coloration of the shell, *H. fallax* being mostly uniformly brown coloured. Adult shells of *Haustellum* sp. measure from 73 to 94 mm in length.

More specimens, if possible with shell with intact protoconch, would be welcome to support and confirm these differences.

GROUP 2 : *Haustellum* s.l.

**Haustellum dolichourus** Ponder & Vokes, 1988  
(Fig. 18)

*Haustellum dolichourus* Ponder & Vokes, 1988 : 105, figs, 50L-N; 68H; 72E; 79A; 88F; 89H; Table 43.

MATERIAL EXAMINED. — Zululand : of Point Durnford, 29°05' S, 32°09' E, 142 m, mud, dredged R.V. "Meiring Naudé", 10 June 1987, 1 sp., NM D7800; Zululand : N.E. of Leven Point, 27°55' S, 32°37' E, 42-50 m, pennatulids, dredged R.V. "Meiring Naudé", 9 June 1988, 1 sp., NM E4416.

#### REMARKS

Mentioned and illustrated here for its range extension. The species was initially reported from several localities, but in the western Indian Ocean only from northern Madagascar, Mauritius and Reunion islands.

#### ***Haustellum purdyae* (Radwin & D'Attilio, 1976)**

(Figs 20-23, 24-25, 33, 34-35)

*Murex purdyae* Radwin & D'Attilio, 1976 : 229, figs 177-179.

*Haustellum purdyae* (Radwin & D'Attilio, 1976) : PONDER & VOKES, 1988 : 117, figs 58, 61.

MATERIAL EXAMINED. — Off Cape Natal, Southern Africa, 2 shs, SAM A8833, SAM A8834; Natal, Southern Africa, 1 sp., coll. R. HOUART; Cabo das Correntes, North Inhambane, Mozambique, 150 m, 1 sp., coll. C. P. FERNANDES; between Cabo das Correntes and Zavora Point, Mozambique, 150-175 m, 1 sp., coll. R. HOUART.

#### REMARKS

The occurrence of specimens in southern Mozambique is a northern extension of the known range of this species which was previously known only from off Natal, South Africa. The only differences between the shell of typical South African specimens and that of the juvenile from off Mozambique are the finer and more numerous spiral threads on teleoconch whorls in the South African specimens, PONDER & VOKES (1988 : 117) described the spiral ornamentation of the last whorl and siphonal canal as being covered with alternating indistinct major and minor cords, this character can be observed on South African specimens and on one adult shell from off Mozambique (fig. 23). The last whorl of a juvenile South African specimen illustrated here (SAM A8833) bears 5 spiral cords and 30 or 31 shallow and small irregular spiral threads (fig. 24-25), while the last whorl of the juvenile specimen from off Mozambique has 4 spiral cords and only 15 broad spiral threads (fig. 20-22), these being only slightly narrower than the cords.

The species probably has intracapsular development, and it is frequent in such species to see differences in the size and form of the paucispiral protoconch (BOUCHET, 1987). The fewer, larger, and more regular spiral threads in the Mozambique shell may be significant, however, as spiral sculpture is generally rather stable intraspecifically.

However, more material is required before a decision about the taxonomic status of this specimen can be made.

***Haustellum dentifer coriolis* n. subsp.**

(Figs 8-10, 27)

**MATERIAL EXAMINED.** — **South of New Caledonia** : R.V. "Alis", SMIB 4, stn DW 43, 24°47' S 168°09' E, 235-245 m, 8 March 1989, 1 sp., MNHN; R.V. "Alis", SMIB 4, Stn DW 44, 24°46' S, 168°08' E, 270-300 m, 8 March 1989, 1 sh., MNHN; R.V. "Alis", SMIB 4, stn DW 45, 24°46' S, 168°09' E, 245-260 m, 8 March 1989, 1 sp., MNHN; R.V. "Alis", SMIB 4, stn DW 55, 23°21' S, 168°05' E, 9 March, 1989, 1 sh., MNHN; R.V. "Coriolis", CHALCAL 2, stn DW 71, 24°42' S, 168°10' E, 230 m, 27 October 1986, 3 shs, 2 sp., MNHN; R.V. "Coriolis", CHALCAL 2, stn DW 83, 23°20' S, 168°06' E, 200 m, 31 October 1986, 1 sh.; New Caledonia, R.V. "Jean-Charcot", BIOCAL, stn CP 84, 20°43' S, 167°01' E, 150-210 m, 6 September 1985. — **N.E. New Caledonia, Programme "lagon"** : Secteur de Poindimié, stn 830, 20°49' S, 165°19' E, 105-110 m, 10 January 1987, 1 sh., MNHN. — **Loyalty ridge, New Caledonia** : R.V. "Alis", MUSORSTOM 6, stn DW 442, 20°54' S 167°17' E, 200 m 19 February 1989, 1 sh., MNHN; R.V. "Alis", MUSORSTOM 6, stn DW 452, 21°00' S, 167°25' E, 300 m, 20 February 1989, 1 sh., MNHN; R.V. "Alis", MUSORSTOM 6, stn DW 453, 21°00' S, 167°27' E, 250 m, 20 February 1989, 1 sh., MNHN; R.V. "Alis", MUSORSTOM 6, stn DW 461, 21°06' S, 167°26' E, 240 m, 21 February 1989, 5 sps; MNHN; R.V. "Alis", MUSORSTOM 6, stn DW 462, 21°05' S, 167°27' E, 200 m, 21 February 1989, 2 shs, MNHN. All collected by BOUCHET, MÉTIVIER and RICHER DE FORGES.

**TYPE MATERIAL.** — Holotype MNHN, CHALCAL 2, stn DW 83, 59.2 × 27.5 mm; 3 paratypes MNHN, CHALCAL 2, stn DW 71; 1 paratype AMS C159080, stn DW 71; 1 paratype NM K6303/T233, stn DW 71, 1 paratype coll. R. HOUART, SMIB 4, stn DW 43; 1 paratype MNHN, SMIB 4, stn 44; 1 paratype NMNZ MF.49871, SMIB 4, stn DW 45; 1 paratype MNHN, stn DW 55.

**TYPE LOCALITY** : South of New Caledonia, 23°20' S, 168°06' E, 200 m.

**DESCRIPTION**

Shell small to medium-sized for genus, up to 68.2 mm in length (stn DW 461, MNHN). Spire high, consisting of 2 protoconch whorls and 7 rounded, convex teleoconch whorls. Suture slightly appressed. Protoconch glossy and rounded, sometimes keeled anteriorly, 2-3 first teleoconch whorls with 9-11 axial ribs; last whorl axially ornamented with 3 rounded and spineless varices and 2-3 intervarical axial ridges; usually third ridge weak when present. Spiral sculpture of 12 low, rounded primary cords, 2 of these on the shoulder; 2-3 low, shallow threads between each pair of cords. Aperture rounded; columellar lip flaring, with 3 to 4 folds anteriorly. Anal notch large, shallow. Outer apertural lip erect with 10-12 lirations interiorly.

Siphonal canal long, spineless, narrowly open, ornamented with 13-14 strong spiral cords. Shell white to light brown, spiral cords and upper part of siphonal canal usually light brown coloured. Operculum brown, with 6 concentric ridges and subapical nucleus.

**REMARKS**

The shell of this new subspecies is distinguished from that of the nominal subspecies *Haustellum dentifer dentifer* Watson, 1883, known from Southern Japan to Western Papua



New Guinea and in the Java Sea, by differences on the siphonal canal, the typical subspecies having 13-21 irregular spiral cords and threads instead of the 13-14 strong cords for the new subspecies. Moreover *H. dentifer dentifer* has thicker and more developed varices, stronger spiral and axial sculpture, a higher and more acute spire and impressed suture. *H. dentifer coriolis* begin to develop axial varices on the third or fourth teleoconch whorl, having 9-11 axial ribs on previous whorls, while the typical subspecies shows 12-13 axial ribs on first and second teleoconch whorls, beginning to develop axial varices on third, or even on second teleoconch whorls.

*H. gallinago* (Sowerby, 1903) has a spinose shell with sharper varices, whereas the shell of *H. dentifer coriolis* has a more flaring columellar lip, and a lower spire. The spiral sculpture of the siphonal canal of *H. dentifer coriolis* is different, compared to the ornamentation of *H. gallinago* which consists of 3 low cords and 6-7 low and shallow threads. The siphonal canal of *H. dentifer coriolis* is spineless while bearing 1-2 webbed, open spines in *H. gallinago*. The almost identical protoconch of both forms has a small, sharp terminal varix in *C. gallinago*, but the varix is obsolete or very weak in *H. dentifer coriolis* n. subsp.

The other species with which *H. dentifer coriolis* could be confused are *H. kiiensis* (Kira, 1959) and *H. hirasei* (Hirase, 1915) both of which differ in having a shell with multispiral protoconch. The most similar of these two taxa, *H. hirasei* (fig. 19), differs only in two other characters : the spiral cords on the siphonal canal are more irregular and more numerous, and it has a shell with partially sealed siphonal canal while *H. dentifer coriolis* has a narrowly open siphonal canal, but never sealed, even partially.

### ***Haustellum gallinago fernandesi* n. subsp.**

(Figs 4-7, 28)

**MATERIAL EXAMINED.** — Off Quissico, between Boa Paz and Zavora Point, 93-112 m, Mozambique, 3 sps; off Quissico, 90-120 m, Mozambique, 2 sps.

**TYPE MATERIAL.** — Holotype MNHN : 63.2 × 23.5 mm, 1 paratype AMS C159081 ; 1 paratype NM K5761/T 192; 1 paratype coll. C. P. FERNANDES; 1 paratype coll. R. HOUART.

**TYPE LOCALITY.** — Off Quissico (between Boa Paz and Zavora Point), ca. 24°05' S, 34°50' E, 93 to 112 m, rocks, coral and sponges, Mozambique.

### **DESCRIPTION**

Shell medium-sized for the genus, up to 63.2 mm (holotype). Spire high and acute, consisting of 1.75 to 2.25 protoconch whorls, and 7 teleoconch whorls. Suture impressed. Protoconch globose and glossy, ending a strong, erect terminal varix. Axial ornamentation on first teleoconch whorl consisting of 10-13 axial ribs; 10-12 on second whorl. Last whorl axially ornamented with 3 rounded and strong, heavy varices and 2 strong axial ribs between each varix. Varices with a single, small, narrowly open spine on the shoulder. Spiral sculpture of 33-35 almost equi-sized, rounded cords, 7-8 on the shoulder. Aperture broadly-ovate. Columellar lip weakly lirate anteriorly on the holotype, strongly lirate on the illustrated and other



subadult specimens, erect anteriorly and slightly adherent to shell posteriorly. Anal notch broad and shallow. Outer apertural lip erect, crenulate, inner side with 6-7 weak lirations.

Siphonal canal long, narrowly open, spineless, except for 2 small, open spines on its base. Colour cream, with some brown coloured spiral cords and 3 darker spiral bands at the shoulder, the periphery and base of last whorl (no darker bands in subadult specimens). Operculum and animal unknown.

#### REMARKS

Few poorly-preserved specimens of so-called *H. gallinago* were examined from off Mozambique by PONDER & VOKES (1988 : 109). The authors observed almost identical shell features but were not convinced they were the same species. The examined shells were most probably the same as the new subspecies described here. *H. g. fernandesi* differs from the nominal form, known from Southern Japan to Borneo, in having more rounded varices, more regular and more numerous spiral threads (33-35 in *H. gallinago fernandesi* and 9-14 in the nominal subspecies), and an almost spineless shell. The intervarical axial ornamentation of the last teleoconch whorl consists of 2 strong ribs while generally consisting of 2-3 weaker ones in *H. gallinago*.

*H. dentifer* has a more rounded shell, more axial ribs, stronger varices, fewer spiral threads and more globose last whorl. *H. kiiensis*, *H. hirasei*, and *H. dolichourus* all differ in having a shell with multispiral protoconch, denoting probably a planktotrophic larval development.

The species is named for Mr. C. P. FERNANDES (Cascais, Portugal) who sent these specimens to the author for examination.

#### Acknowledgements

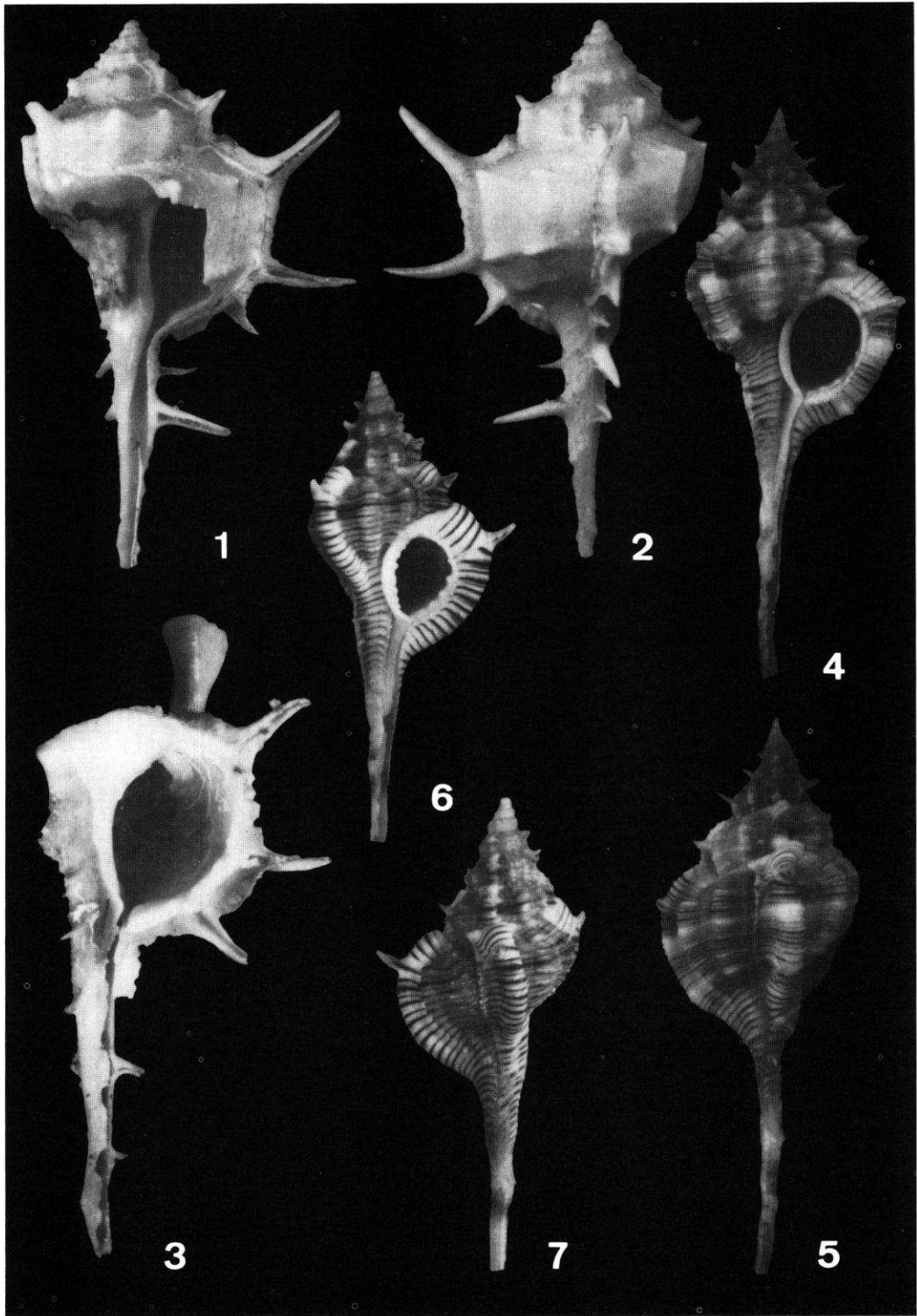
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FIGURES 1-7.

- 1-3 — *Murex (Murex) protocrassus* n. sp., New Caledonia : 1-2, holotype MNHN, 57 mm ; 3, paratype MNHN, 66.5 mm.  
4-7 — *Haustellum gallinago fernandesi* n. subsp., Mozambique : 4-5, holotype MNHN, 63.2 mm ; 6-7, paratype coll. R. HOUART, 40 mm.



FIGURES 8-13.

- 8-10 — *Haustellum dentifer coriolis* n. subsp., New Caledonia : 8-9, holotype MNHN, 59.2 mm ; 10, MUSORSTOM 6, stn. DW461, MNHN, 68.5 mm.  
11 — *Haustellum haustellum haustellum* (Linné, 1758). Mozambique, coll. R. HOUART, 92.1 mm.  
12-13 — *Haustellum haustellum longicaudus* (Baker, 1891). Ethiopia, coll. R. HOUART, 86.5 mm.



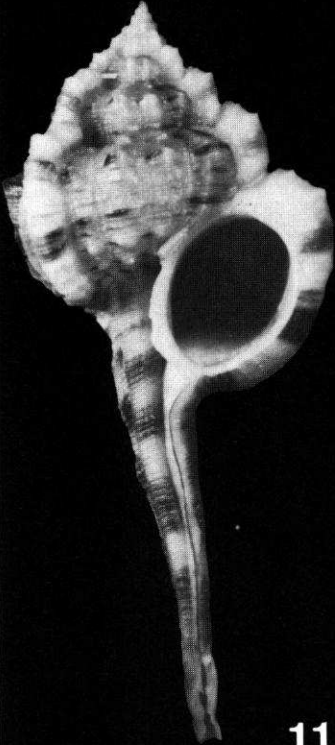
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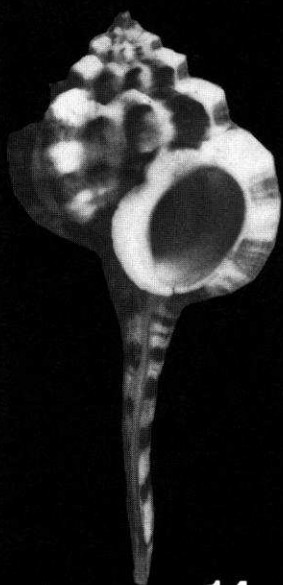
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FIGURES 14-19.

- 14-16 — *Haustellum* sp. Mozambique : 14-15, coll. R. HOUART, 94 mm; 16, coll. R. HOUART, 90.5 mm.  
17 — *Haustellum fallax* (Smith, 1901), Mozambique, coll. R. HOUART, 78.5 mm.  
18 — *Haustellum dolichourus* Ponder & Vokes, 1988, Zululand, South Africa, NM E4416, 67.1 mm.  
19 — *Haustellum hirasei* (Hirase, 1915). New Caledonia, MNHN, 81.8 mm.



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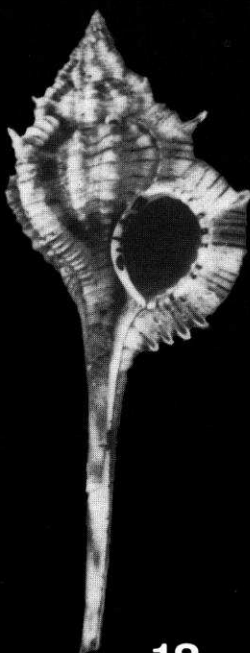
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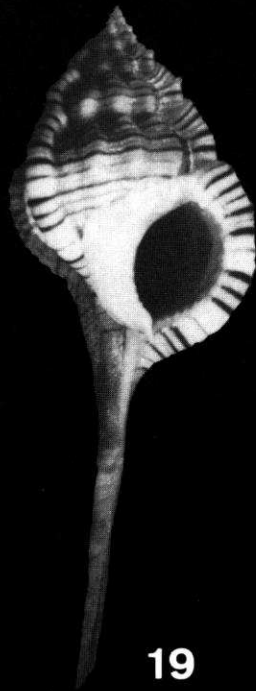
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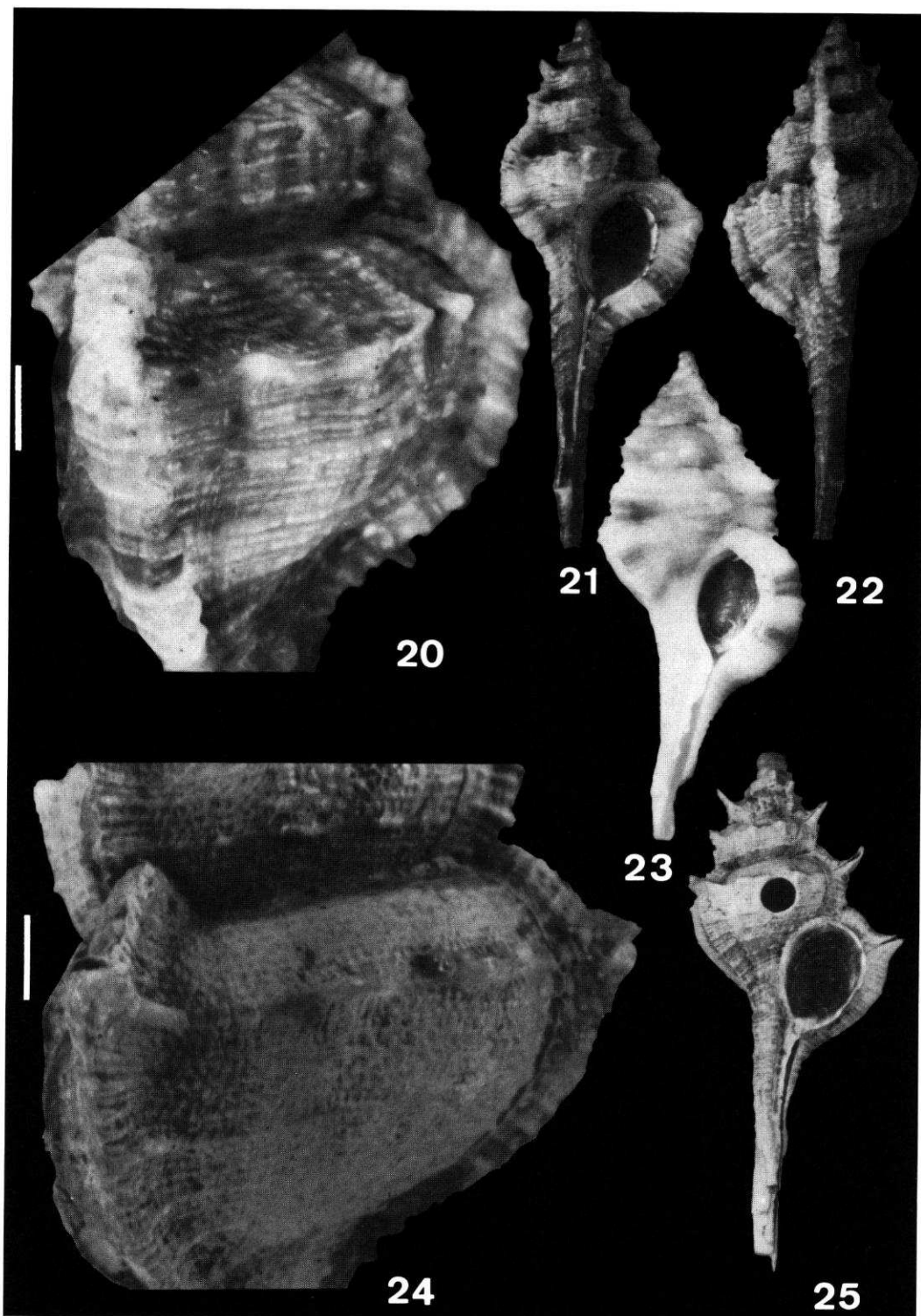


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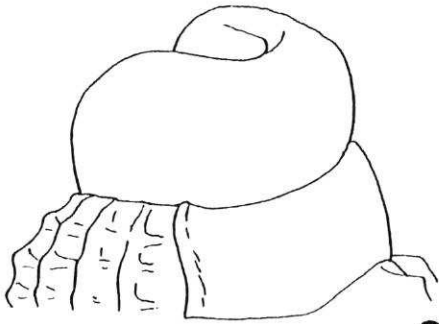
FIGURES 20-25 (scales bars : 1 mm).

- 20-22 — *Haustellum* cf. *purdyae* (Radwin & D'Attilio, 1976), Mozambique , coll. C. P. FERNANDES, 31.1 mm.  
23-25 — *Haustellum purdyae* (Radwin & D'Attilio, 1976) : 23, Mozambique, coll. R. HOUART, 48.1 mm ; 24-25, South Africa, SAM A8833, 36,1 mm.

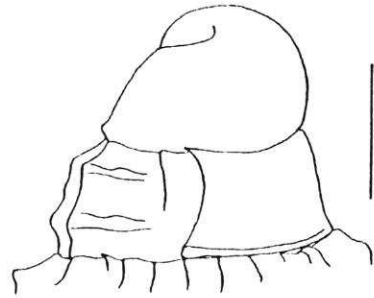


FIGURES 26-35 : protoconchs (scale bars : 0.5mm).

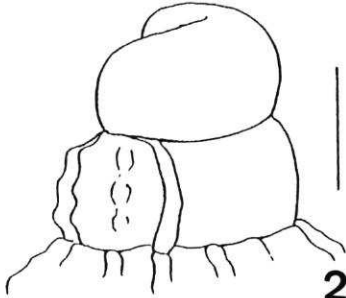
- 26 — *Murex (Murex) protocrassus* n. sp. New Caledonia, holotype MNHN.
- 27 — *Haustellum dentifer coriolis* n. subsp. New Caledonia, paratype MNHN.
- 28 — *Haustellum gallinago fernandesi* n. subsp. Mozambique, paratype coll. R. HOUART.
- 29 — *Haustellum haustellum longicaudus* (Baker, 1891). Ethiopia, coll. R. HOUART (illustrated in figs 12-13).
- 30 — *Haustellum fallax* (Smith, 1901). Mozambique, coll. R. HOUART (illustrated in fig. 17).
- 31 — *Haustellum haustellum haustellum* (Linné, 1758). New Caledonia, MNHN.
- 32 — *Haustellum* sp. Madagascar, coll. R. HOUART.
- 33 — *Haustellum* cf. *purdyae* (Radwin & D'Attilio, 1976). Mozambique, coll. C. P. FERNANDES (illustrated in figs 20-22).
- 34-35 — *Haustellum purdyae* (Radwin & D'Attilio, 1976). South Africa, SAM A8833 (illustrated in figs 24, 25).



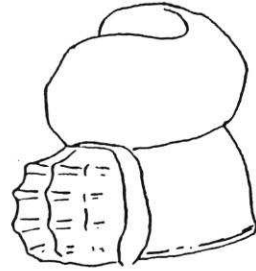
26



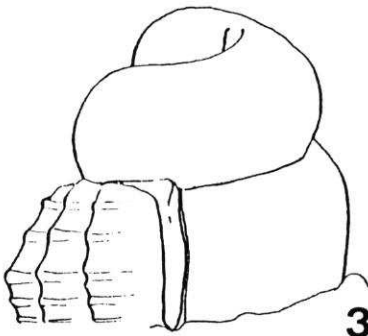
27



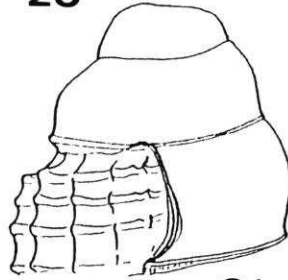
28



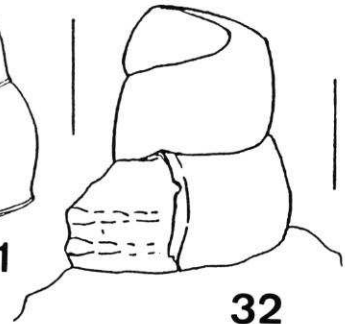
29



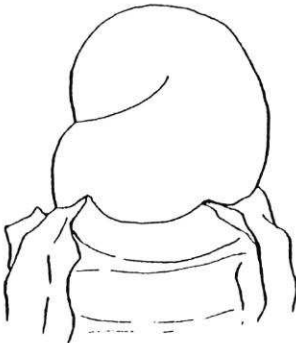
30



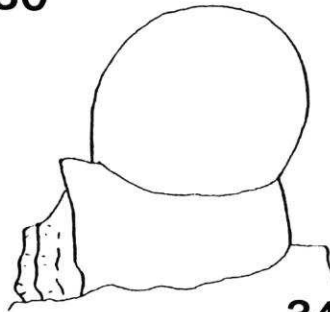
31



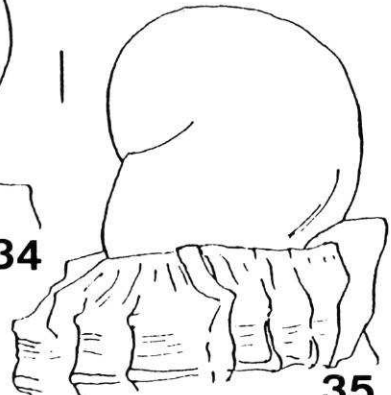
32



33



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