

A. A. Schileyko

TREATISE ON RECENT TERRESTRIAL  
PULMONATE MOLLUSCS

Part 3

Partulidae, Aillyidae, Bulimulidae,  
Orthalicidae, Megaspiridae,  
Urocoptidae



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Suborder ACHATINOIDEI  
Schileyko, 1979

Schileyko, 1979: 55 (as Achatinina). Golikov & Starobogatov, 1988: 69.

Shell elongated, ovate to slender (turritid, aciculate or fusiform); rarely more or less reduced. Columella simple or with entering lamella(e).

Jaw stegognathous with modifications or pignognathous.

Sole without longitudinal grooves. Caudal horn absent (sole exception — *Aillya*), caudal foss wanting.

Kidney orthurethral or mesurethral, ureters open to closed throughout entire length.

Distal parts of male division of reproductive tract usually simple, often with flagellum, penis sometimes with additional organ. Female division without appendages.

Infraorder PARTULOINEI  
Schileyko & Starobogatov, 1988

Schileyko & Starobogatov in Golikov & Starobogatov, 1988: 69.

Shell generally achatinelloid, medium-sized.

Kidney orthurethral, elongated-triangular, much longer than pericardium, with strengthened, long distal end; ureters have appearance of open ciliary grooves.

Jaw of modified stegognathous type, very thin, consisting of many narrow, low, transversal plaits.

Prostate short, of few not tubular acini at upper portion of uterus below albumen gland.

PARTULIDAE Pilsbry, 1900

Pilsbry, 1900b: 564.

Shell medium to moderately large, bulimoid, ovate to elongated. Aperture margins expanded and reflexed. Parietal wall often with short tuberculiform tooth. Columellar margin dilate, curving into basal margin, simple or nodulous. No entering lamellae or folds in aperture.

Sole undivided.

Jaw of goniognathous type, very thin, composed of many narrow flat plaits converging downward towards middle.

Kidney orthurethrous, narrowly triangular, equal to twice exceeding pericardium in length. Ureters open, as ciliary grooves.

Prostate generally small and short, vas deferens arising just below albumen gland; thus, spermoviduct as such very short. Penis with or without flagellum. Penial retractor inserts (sub)apically. Reservoir of spermatheca often with apical ligament.

DISTRIBUTION. High islands of S and W Pacific.

REMARK. Partulidae are usually placed among orthurethral taxa because of their long kidney. However their reproductive tract always and, seemingly, initially lacks penial appendix and caecum which are very characteristic (at least, originally) of any orthurethral group. That is why I place this family in Achatinoidei as a separate infraorder.

*Eua* Pilsbry et Cooke, 1934

Pilsbry & Cooke, 1934: 4.

TYPE SPECIES — *Eua globosa* Pilsbry et Cooke, 1934; OD.

Prostate very short. Flagellum absent. Interior of penis with a few strong pilasters; pore of vas deferens (sub)apical.

Ovoviviparous animals.

DISTRIBUTION. Tonga, Samoa, Fiji.

*Eua* (*Eua* s. str.)  
Fig. 317

Shell dextral, globose-conic or oblong-conic, not glossy, moderately thin but opaque, of about 4.5 convex whorls. Body whorl much inflated, direct. Color uniformly whitish or pale buff. Embryonic whorls with crowded spiral incised lines; subsequent whorls with coarse spiral cords; radial sculpture of fine irregular striation. Aperture subcircular or shortly ovate, with expanded and slightly thickened margins. Parietal callus variously developed. Umbilicus relatively wide, cylindrical. Height 21.6-22.5, diam. 19.0-20.0 mm (22.5 × 19.0 mm).

Hermaphroditic duct convoluted. Vas deferens long, not twisted, entering penis apically. Penis short, ovate, internally with strong fleshy pilaster, having longitudinal grooves. Slit-like orifice of vas deferens (epiphallic pore) covered up by this pilaster.

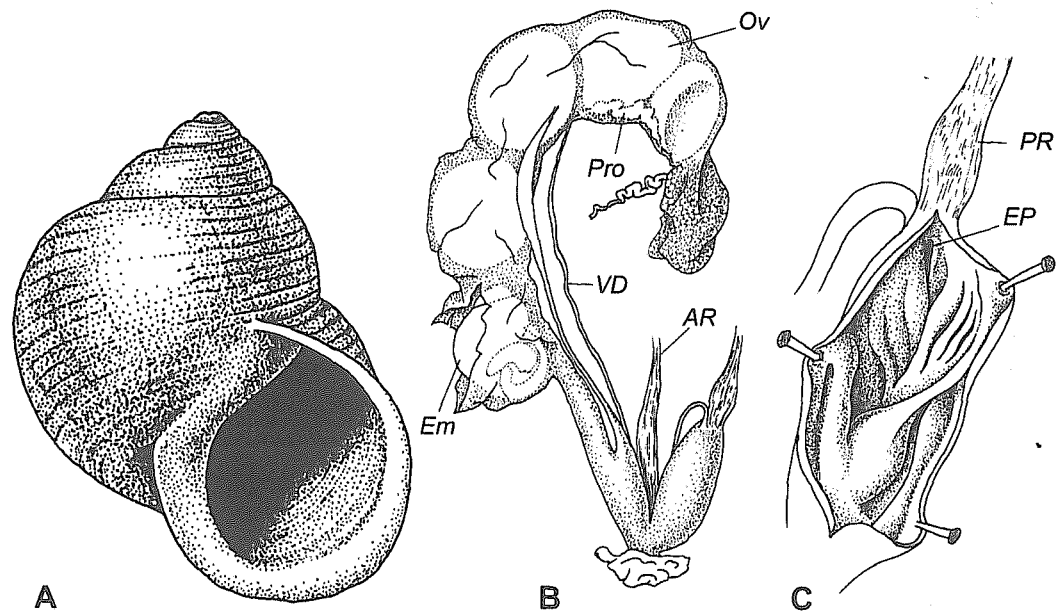


Fig. 317. *Eua (Eua) globosa* Pilsbry et Cooke, 1934.  
A — shell: Bugai, Eua Island, Tonga. Phil. No. 162130. B, C — Eua, tall heavy forest, January 29, 1966. B — reproductive tract; C — interior of penis. Chicago No. 152388.

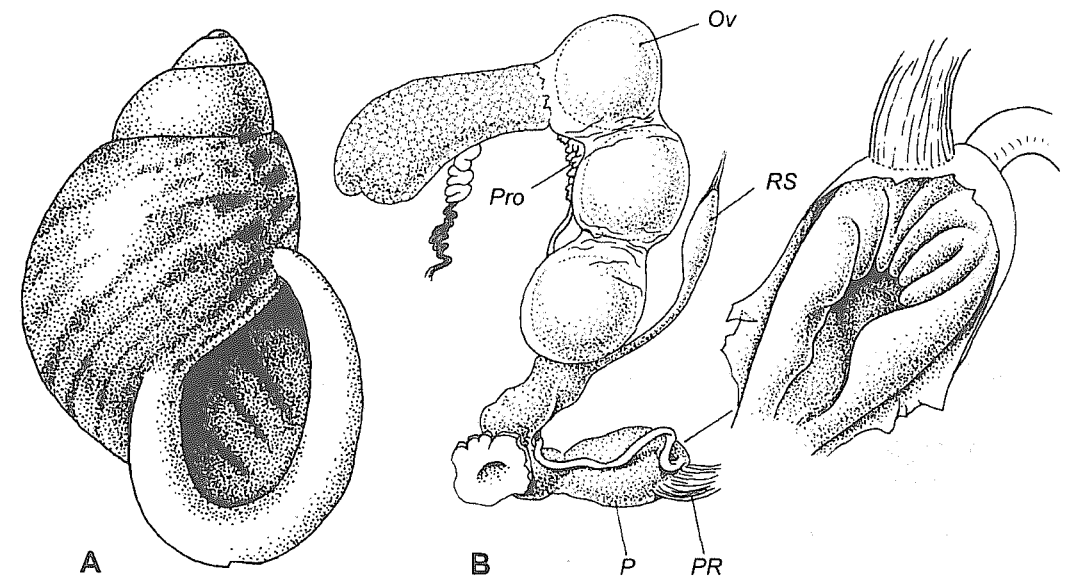


Fig. 318. *Eua (Nesanassa) zebrina* (Gould, 1846).  
Fagasa — Pago Pago pass from Pago Pago, Tutuila, Samoa. March 9, 1975. Moscow No. Lc-23331 (Chicago). A — shell. B — reproductive tract and interior of penis.

Penial retractor attached at entry of vas deferens. Atrial retractor strong. Spermathecal stalk slender, reservoir narrowly fusiform, with weak apical ligament.

DISTRIBUTION. Eua Island (Tonga). 1 sp.

*Eua (Nesanassa) Pilsbry et Cooke, 1934*  
Fig. 318

Pilsbry & Cooke, 1934: 18.

TYPE SPECIES — *Partula zebrina* Gould, 1846; OD.

Shell dextral, oblong-ovate, opaque, rather solid, of 4.5 convex whorls. Last whorl direct or scarcely ascending in front. Color pattern variegated. Embryonic whorls practically smooth. Postnuclear whorls with very weak tuberculate sculpture. Aperture ovate, with flatly reflexed and thickened margins. Umbilicus relatively wide, cylindrical. Height 18-21, diam. 11.0-13.5 mm (19.5 × 12.5 mm).

Hermaphroditic duct convoluted, its slender proximal portion intensively pigmented, enlarged distal portion light yellowish. Vas deferens thin, entering penis ter-

minally. Penis short, bulky, sac-like, internally with high, fleshy U-shaped pilaster, its free edge folded over. Penial retractor short, stout, attached to penis subapically. Vagina moderately long. Spermathecal stalk relatively long.

DISTRIBUTION. Samoa Islands (Tutuila, Upolu). 3 spp.

*Eua (Thakombaua) Pilsbry, 1909*  
Fig. 319

Pilsbry, 1909: 165, 274 (*Partula* sect.).

— *Thakombaua* Thiele, 1931: 659 (nom. err. pro *Thakombaua* Pilsbry, 1909).

— *Thakombana* Richardson, 1990: 6 (nom. err. pro *Thakombaua* Pilsbry, 1909).

TYPE SPECIES — *Partula lirata* Mousson, 1865; OD.

Shell dextral, elongated-ovate, rather thin but solid, lusterless, of 5-5.5 moderately convex whorls. Last whorl direct. Color ivory to dark liver brown. Initial half of first embryonic whorl smooth, next half very subtly punctate-striate spirally, spiral

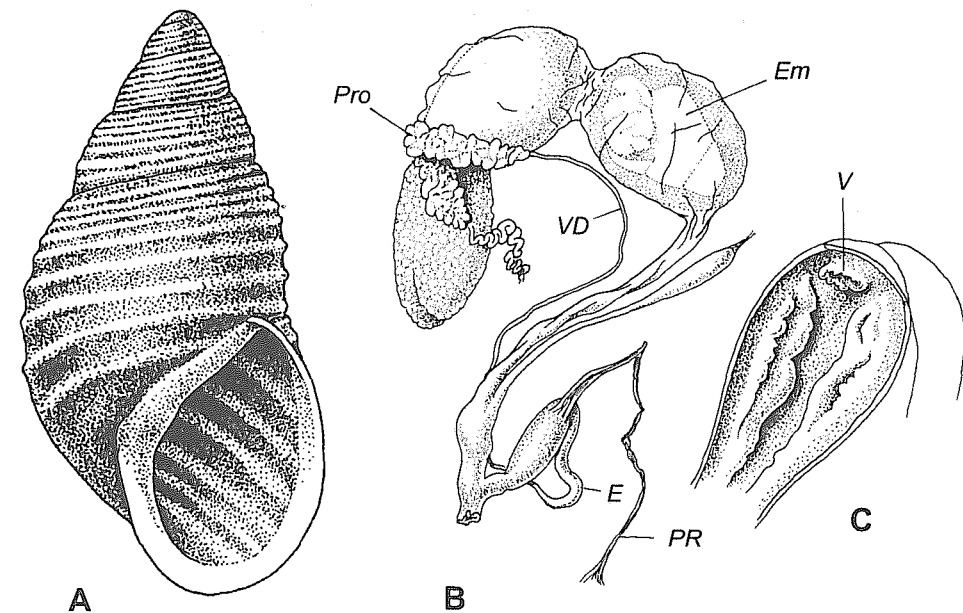


Fig. 319. *Eua (Thakombaua) lirata* (Mousson, 1865).  
A — shell: Viti Island, Fiji Islands. Leiden. B, C — 1.5 km in, NW Vanua, Mbalavu, NE Lau Group, Fiji, October 4, 1970. B — reproductive tract; C — interior of penis. Moscow No. Lc-23335 (Chicago).

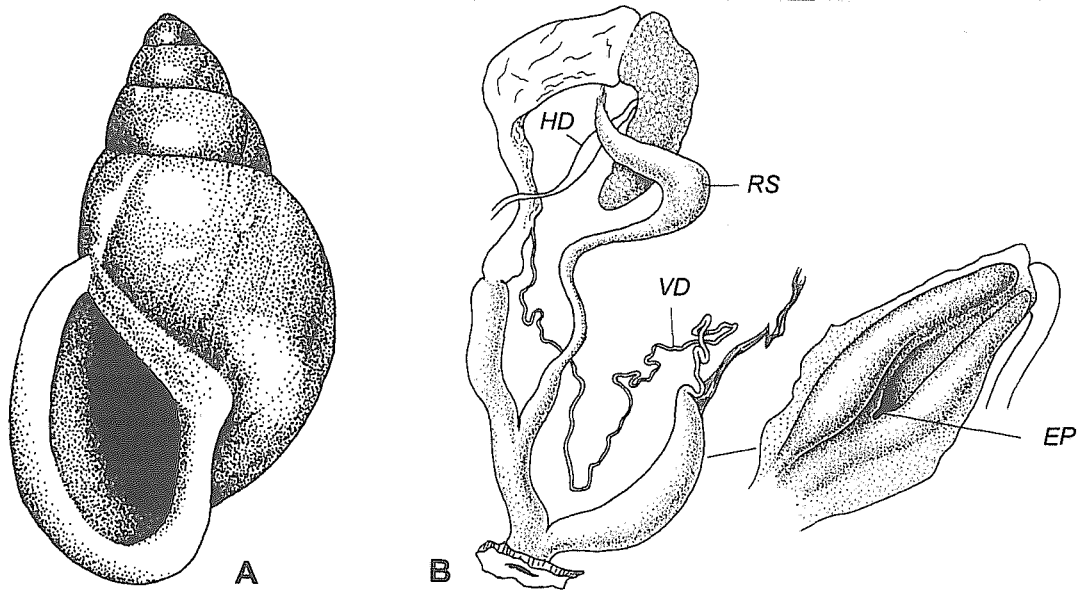


Fig. 320. *Samoana (Samoana) canalis* (Mousson, 1865).  
Vai'a'ata near Vaiola, Savaii, W Samoa, November 26, 1965. Chicago No. 152570. A — shell. B — reproductive tract and interior of penis.

threads on later whorl fewer; third whorl with very weak spirals, becoming distinct but low cords on onset of postapical whorls; these increase in prominence to body whorl, turning into strong cords. Aperture ovate, oblique, with narrowly expanded margins. Parietal callus distinct but semitransparent, sometimes with white variously developed callous tubercle. Umbilicus, a minute rim. Height 18-21, diam. 9.5-10.0 mm (18.5 × 9.6 mm).

Hermaphroditic duct strongly convoluted. Vas deferens or its distal part markedly enlarged, entering penis (sub)apically. Penis club-shaped, internally plicate at distal portion; proximal part with irregular ridges and papillae. Orifice of vas deferens surrounded by circular thickening (vestigial verge). Penial retractor thin, long, inserted subapically. Vagina short. Spermathecal stalk also rather short, reservoir lanceolate.

DISTRIBUTION. Fiji Islands. 1 sp.

### *Samoana* Pilsbry, 1909

Pilsbry, 1909: 165, 263 (*Partula* sect.).

— *Evadne* Hartman, 1881: 12 [nom. praeocc., non Loven, 1835; *Partula* subg.; t.-sp. "*Evadne*

*bulimoides* Lesson", not of Lesson, 1831 (= *Partula canalis* Mousson, 1865); OD].

TYPE SPECIES — *Partula canalis* Mousson, 1865; OD.

Prostate comparatively long. Flagellum absent. Interior of penis with strong V-shaped pilaster; pore of vas deferens situated at some distance from apex.

Oviparous animals.

DISTRIBUTION. Samoa, Tonga, Marquesas.

### *Samoana (Samoana s. str.)*

Fig. 320

Shell dextral or sinistral, elongated-ovate, solid, of 5-6 rather convex whorls. Last whorl direct or scarcely ascending in front. Color uniformly brown or dark-corneous. Sculpture weak. Aperture elongated-ovate, with flatly reflexed, expanded margins. Umbilicus openly rimate or widely cylindrical. Height 16-29, diam. 9.5-15.5 mm (24.0 × 14.3 mm).

Hermaphroditic duct even or moderately convoluted. Vas deferens thin, very long, strongly to moderately twisted and sinuous,

entering penis apically or shortly below. Penis large, thick-walled, more or less fusiform, internally with strong longitudinal pilaster, starting from atrium as single ridge and forked upward; pore of vas deferens opens between arms at place of bifurcation. Sometimes this pattern secondarily complicated. Penial retractor inserting subapically onto penis and base of vas deferens. Vagina moderately long. Demarcation between spermathecal stalk and reservoir indistinct.

DISTRIBUTION. Samoa and Tonga Islands. 22-23 spp. & subspp.

### *Samoana (Marquesana)* Pilsbry, 1909

Fig. 321

Pilsbry, 1909: 165, 168 (*Partula* sect.).

— *Aega* Hartman, 1881: 11 (nom. praeocc., non Leach, 1815; *Partula* subg.; t.-sp. *Bulimus decussatus* L. Pfeiffer, 1849; OD).

— *Latia* Hartman, 1881: 12 (nom. praeocc., non Gray, 1849; *Partula* subg.; t.-sp. *Bulimus ganymedes* L. Pfeiffer, 1846; OD).

TYPE SPECIES — *Bulimus ganymedes* L. Pfeiffer, 1846; OD.

Shell dextral, elongated-ovate, moderately solid, of 4.5-5.5 more or less convex whorls. Last whorl direct or scarcely ascending in front. Color dull; periostracum thin, often deciduous; peripheral dark band often present. Embryonic whorls coarsely pitted along spiral lines; surface of later whorls with distinct wavy spiral striae. Aperture narrowly ovate, subvertical, margins thin but often widely expanded. Umbilicus, a minute perforation. Height 14-23, diam. 9.7-17.0 mm (16.2 × 9.8 mm).

DISTRIBUTION. Marquesas Islands. 8 spp. & subspp.

### *Partula* Férussac, 1819

Férussac, 1819: 65.

— *Partulus* Beck, 1837: 57 (nom. err. pro *Partula* Férussac, 1819).

— *Nenia* Hartman, 1881: 7 (nom. praeocc., non H. Adams & A. Adams, 1855; *Partula* subg.; t.-sp. *Partula auriculata* Broderip, 1832; OD).

— *Astraea* Hartman, 1881: 7 (nom. praeocc., non Röding, 1798; *Partula* subg.; t.-sp. *Partula dentifera* L. Pfeiffer, 1853; OD).

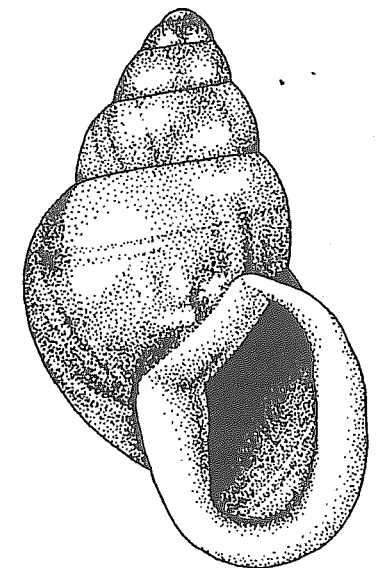


Fig. 321. *Samoana (Marquesana) ganymedes* (L. Pfeiffer, 1846).  
Marquesas. Leiden.

— *Clytia* Hartman, 1881: 8 (nom. praeocc., non Lamouroux, 1812; *Partula* subg.; t.-sp. *Partula umbilicata* Pease, 1866; OD).

— *Ilia* Hartman, 1881: 8 (nom. praeocc., non Leach, 1817; *Partula* subg.; t.-sp. *Partula lutea* Lesson, 1831; OD).

— *Oenone* Hartman, 1881: 9 (nom. praeocc., non Savigny, 1817; *Partula* subg.; t.-sp. *Bulimus hebe* L. Pfeiffer, 1846; OD).

— *Helena* Hartman, 1881: 9 (nom. praeocc., non Risso, 1826; *Partula* subg.; t.-sp. *Bulimus otaheitanus* Bruguière, 1789; OD).

— *Pasithea* Hartman, 1881: 10 (nom. praeocc., non Lea, 1833; *Partula* subg.; t.-sp. *Partula spadicea* Reeve, 1950; OD).

— *Matata* Hartman, 1881: 14 (nom. praeocc., non Fabricius, 1823; *Partula* subg.; t.-sp. *Partula rosea* Broderip, 1832; OD).

— ?*Scilistylus* Iredale, 1941: 64 (t.-sp. *Placostylus remotus* Hedley, 1898; OD).

TYPE SPECIES — *Limax faba* Martyn, 1784; SD Herrmannsen, 1848.

Prostate short. Flagellum present. Interior of penis with several irregular pilasters partially broken into rows of rounded tubercles. Pore of vas deferens situated at base of flagellum.



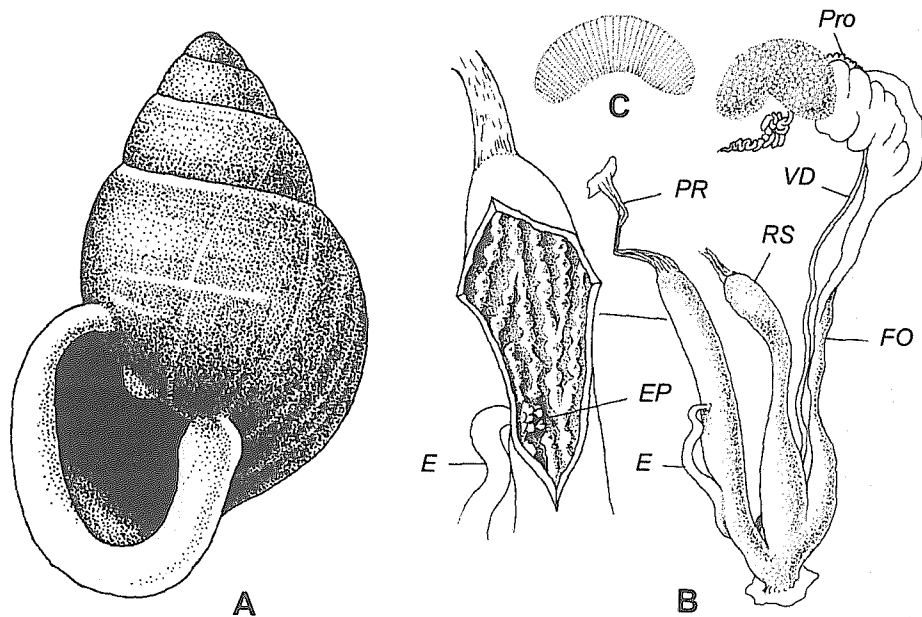


Fig. 322. ! *Partula (Partula) otaheitana* (Bruguère, 1789).  
Punaruu Valley, 10 km from shore, Taiti-Nui, Tahiti, June 6, 1970. A — shell. B — reproductive tract and interior of penis. C — jaw. Moscow No. Lc-23330.

Oviparous animals.  
DISTRIBUTION. From Belau and Mariana to Society Islands.

*Partula (Partula s. str.)*  
Fig. 322

Shell dextral or sinistral, rather solid to quite solid, of 5-6 moderately convex whorls. Last whorl straight or scarcely ascending in front. Color whitish to yellow-pinkish or dark brown, uniform or with sub-sutural dark band. Embryonic whorls spirally striated; sculpture of postnuclear whorls composed of spiral incised lines, which expressed better on early whorls, and weak to rather coarse irregular radial wrinkles. Aperture ovate, slightly oblique, with usually flatly reflexed and expanded margins. Parietal tooth sometimes present. Height 14-25, diam. 8-13 mm (19.4 × 10.2 mm).

Hermaphroditic duct highly convoluted. Vas deferens entering penis at some distance from apex. Penis internally subdivided into two sections: distal with more or less developed longitudinal folds, proximal with anastomosing longitudinal uneven folds, having numerous local widenings to

form minute conic papillae. Penial retractor attached to flagellum apically. Atrial retractor absent or atrium and lower vagina furnished with a number of retentors. Vagina extremely short. Spermatheca with or without distinct division into stalk and reservoir; stalk more or less enlarged.

DISTRIBUTION. Society and Hervey Islands; ?northern Papua New Guinea [*Scilistylus remotus* (Hedley, 1898)]. More than 50 spp. & subspp.

*Partula (Melanesica) Pilsbry, 1909*  
Fig. 323

Pilsbry, 1909: 166, 276 (*Partula* sect.).  
— *Sterope* Hartman, 1881: 14 (nom. praeocc., non Goodsir, 1845; *Partula* subg.; t.-sp. *Helix carteriensis* Quoy et Gaimard, 1832; OD).  
— *Melanesica* Richardson, 1990: 6 (nom. err. pro *Melanesica* Pilsbry, 1909).

TYPE SPECIES — *Partula turneri* L. Pfeiffer, 1860; OD.

Shell dextral, elongated-ovate, rather thin, of 5-6 somewhat convex whorls. Last whorl nearly direct. Suture often bordered above by thread, which continues indistinctly on last whorl as low welt or group

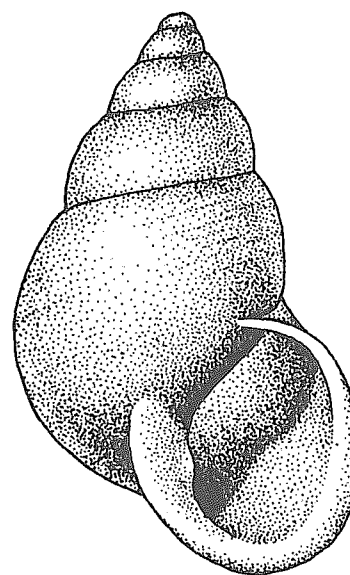


Fig. 323. *Partula (Melanesica) turneri* (L. Pfeiffer, 1860).  
New Hebrides. Phil. No. 59847.

of closer striae. Color whitish, yellow, corneous, or brown, uniform or obliquely streaked, not banded. Embryonic sculpture of spiral pitted lines; postnuclear whorls with simple, well spaced, regular, incised spiral lines. Aperture ovate-circular, margins reflexed, thin, sometimes with diffused lip within. Umbilicus cylindrical, narrow. Height 10.5-26.0, diam. 6.5-14.0 mm (23.1 × 13.8 mm).

Hermaphroditic duct convoluted. Vas deferens thin down to peni-oviducal angle, then its diameter somewhat enlarged; entering penis laterally, well below apex. Vagina rather short. Spermathecal stalk moderately thick, reservoir elongated, without apical ligament.

DISTRIBUTION. Melanesia, Samoa Islands. About 40 spp. & subspp.

*Partula (Carolinella) Pilsbry, 1909*  
Fig. 324

Pilsbry, 1909: 166, 308 (*Partula* sect.).  
TYPE SPECIES — *Bulimus guamensis* L. Pfeiffer, 1846; OD.  
Shell dextral, acuminate-ovate, ventricose, solid, opaque, of 5-5.5 slightly convex

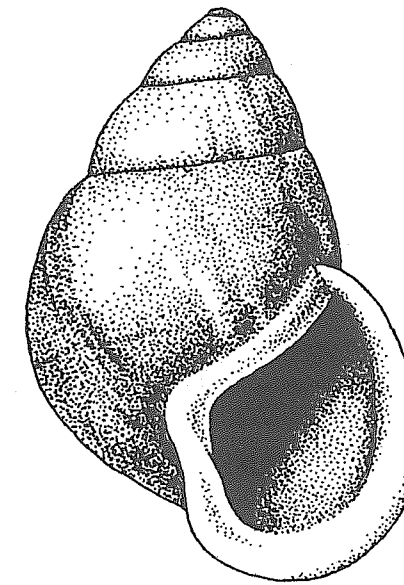


Fig. 324. *Partula (Carolinella) guamensis* (L. Pfeiffer, 1846).  
Caroline Islands. Leiden.

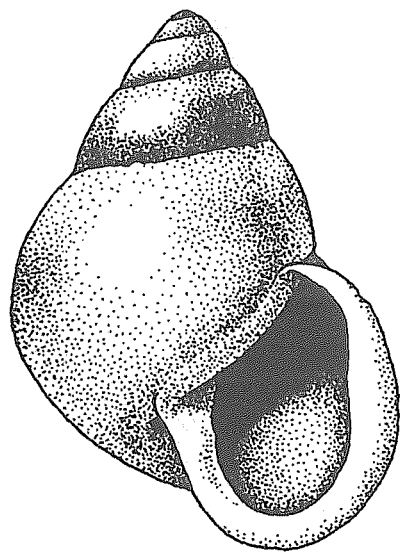
whorls. Body whorl a little ascending in front due to reflection of palatal margin. Color uniformly brown to chestnut. Embryonic shell smooth, later whorls with more or less developed spiral incised lines. Aperture large, simple, margins expanded and reflexed, especially columellar. Parietal callus usually well developed; columellar margin with or without weak oblique lamella. Umbilicus, a minute perforation. Height 16-28, diam. 10.0-18.3 mm (27.5 × 18.5 mm).  
DISTRIBUTION. Caroline Islands. 3 spp.

*Partula (Marianella) Pilsbry, 1909*  
Fig. 325

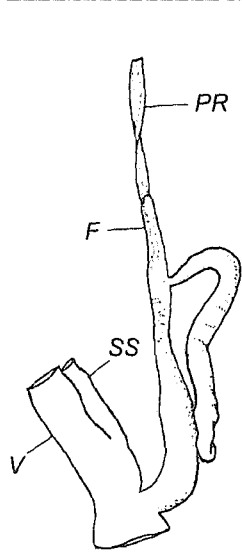
Pilsbry, 1909: 166, 320 (nom. emend. pro *Marianna* Pilsbry, 1909).  
— *Harmonia* Hartman, 1881: 13 (nom. praeocc., non Mulsant, 1846; *Partula* subg.; t.-sp. *Partula gibba* Férussac, 1821; OD).  
— *Marianna* Pilsbry, 1909: 313 (nom. praeocc., page priority).

TYPE SPECIES — *Partula gibba* Férussac, 1821; OD.

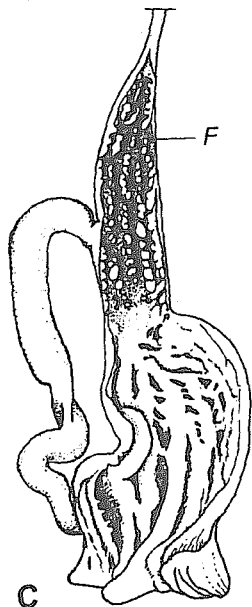
Shell dextral (sinistral specimens known), ovate or inflated, solid, slightly glossy, of 4.5-5 moderately convex whorls.



A



B



C

Fig. 325. *Partula (Marianella) gibba* (Férussac, 1821).  
A — shell: Guam Island, Mariana Islands. Moscow No. Lc-19553 (Leiden). B — distal portion of genitalia. C — interior of penis and flagellum. After Kondo, 1970.

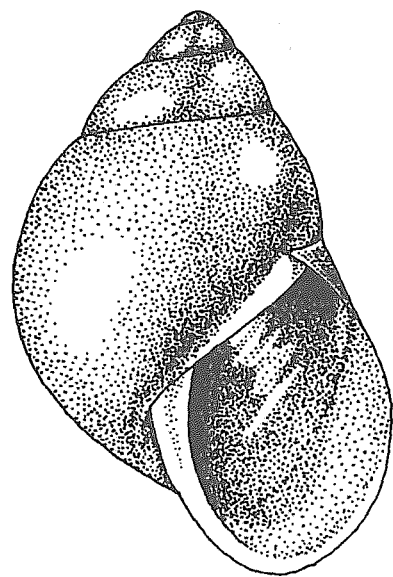


Fig. 326. *Partula (Leptopartula) arguta* (Pease, 1864).  
Huaheine Island, Society Islands. Leiden.

Last whorl direct or scarcely ascending in front. Color yellowish-grey, uniform or with broad band. Embryonic whorls with delicate spiral striae which continue on postnuclear whorls down to aperture. Aperture ample, subvertical, places of its insertion not approached, margins broadly reflexed and thickened. Parietal wall plain or bearing very deeply placed callous nodule. Height 12.9-19.0, diam. 9-13 mm (15.0 × 11.1 mm).

Vas deferens entering penis laterally, at some distance from apex. Descending part of vas deferens slender, ascending part (along penis) markedly expanded. Distal portion of penial chamber internally with a number of anastomosing longitudinal folds; proximal portion (including flagellum) with irregular rows of tubercles. Vagina extremely short. Spermathecal shaft enlarged, reservoir rather small, with apical ligament.

DISTRIBUTION. Mariana Islands. 4 spp. & subspp.

*Partula (Leptopartula) arguta* (Pease, 1864)  
Fig. 326

Pilsbry, 1909: 165, 176 (*Partula* sect.).

— *Echo* Hartman, 1881: 11 (nom. praeocc., non

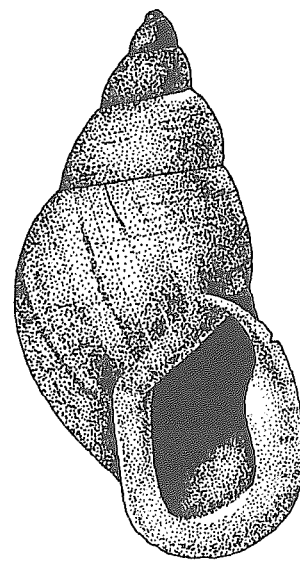


Fig. 327. *Partula (Palaopartula) thetis* (Semper, 1865).  
Koror Island, Palau, Caroline Islands. Moscow No. Lc-23715 (Chicago No. 296161).

Selys, 1853; *Partula* subg.; t.-sp. *Bulimus argutus* Pease, 1864; OD).

TYPE SPECIES — *Bulimus argutus* Pease, 1864; OD.

Shell dextral, ovate, very thin, fragile, somewhat transparent, of 4-4.5 slightly convex whorls. Last whorl straight. Color pale-yellowish. Embryonic whorls finely spirally striate, rest surface retain same striation plus vague irregular radial wrinkles. Aperture large, ovate, scarcely oblique, margins thin, more or less expanded. Umbilicus, a tiny perforation. Height 12-17, diam. 7.5-11.6 mm (12.1 × 7.5 mm).

DISTRIBUTION. Society Islands (Huaheine and Raiatea). 2 spp.

*Partula (Palaopartula) thetis* (Semper, 1865)  
Fig. 327

Pilsbry, 1909: 166, 306 (*Partula* subg.).

— *Palaopartula* Richardson, 1990: 6 (nom. err. pro *Palaopartula* Pilsbry, 1909).

TYPE SPECIES — *Partula thetis* Semper, 1865; OD.

Shell dextral, acuminate-ovate, rather thin but solid, of about 5 moderately con-

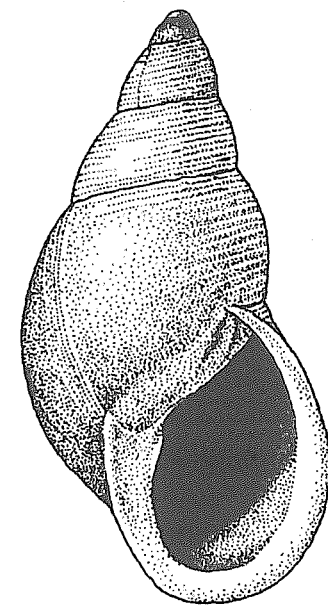


Fig. 328. *Partula (Rennellia) cramptoni* (Clench, 1941).  
Rennell Island, Solomon Islands. Phil. No. 295216.

vex whorls. Last whorl scarcely ascending in front, evenly rounded at periphery. Color honey-brown, often with lighter radial strikes; initial whorls markedly darker. Embryonic whorls with coarse wavy spiral lines; postapical sculpture of similar lines crossed by smoothed irregular radial wrinkles. Aperture subvertical, with widely reflexed and expanded margins. Palatal margin with thickening. Umbilicus deep, dot-like. Height 22-32, diam. 11-15 mm (26.7 × 12.8 mm).

DISTRIBUTION. Caroline Islands (Palau). 2-3 spp.

*Rennellia* Clench, 1941  
Fig. 328

Clench, 1941: 20 (*Partula* sect.).

TYPE SPECIES — *Partula (Rennellia) cramptoni* Clench, 1941; OD.

Shell dextral, elongated, comparatively slender, rather solid, of 5 only slightly convex whorls. Last whorl direct, evenly rounded at periphery. Color light- to dark-brown. Embryonic whorls very finely rugose, postapical sculpture of regular spiral threads, that may be smoothed on body

whorl. Aperture slightly oblique, subovate, with expanded and reflexed margins; upper portion of columellar margin occupied by vestigial subvertical lamella. Umbilicus, a minute perforation. Height 24.5-28.1, diam. 12.5-14.8 mm (24.8 × 12.5 mm).

DISTRIBUTION. Solomon Islands. 1 sp.

### Infraorder AILLYINEI Minichev et Slavoshevskaya, 1971

Minichev & Slavoshevskaya, 1971: 359 (as order Aillyida).

Shell succinoid, thin, covered with two enlarged mantle lobes.

Kidney heterurethral, with completed ureters.

Jaw of modified stegognathous type; consisting of many narrow, low, transversal folds.

Prostate of tubular acini at upper part of uterus below albumen gland.

DISTRIBUTION. W and S Africa.

### AILLYIDAE Minichev et Slavoshevskaya, 1971

Minichev & Slavoshevskaya, 1971: 350, 357. — Van Mol, 1978: 1003, 1019.

Characters and distribution as in infraorder.

REMARK. Zilch (1960) attributed both included genera to Bulimulidae. However, Bulimulidae are absent in Africa; judging from very unusual anatomical characters of *Aillya*, this genus occupies a quite isolated position with unclear relationships (for further discussion see Van Mol, 1978). At the same time, a tendency to shell reduction in *Prestonella*, together with data on plated jaw structure, may indicate that this taxon is a distant, less specialized, relative of *Aillya*.

### ? *Prestonella* Connolly, 1929 Fig. 329

Connolly, 1929: 232.

TYPE SPECIES — *Buliminus* (*Mesembri-*  
*mus*?) *bowkeri* Sowerby, 1889; OD.

Shell somewhat succinoid, fusiform,

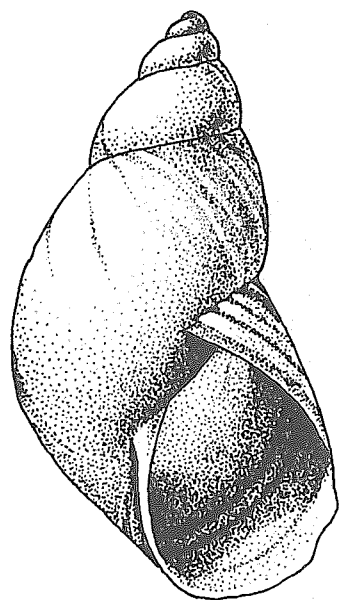


Fig. 329. *Prestonella bowkeri* (Sowerby, 1889). Somerset Fash., Cape Prov., S Africa. Phil. No. 47306.

comparatively solid, slightly translucent, of 4-5 slightly convex whorls. Color white to corneous yellow-brown, with diffuse pinkish streaks. Embryonic whorls smooth, later whorls with spiral striae becoming more vague toward aperture; body whorl smooth or nearly so. Aperture ovate, acuminate above, with simple, very narrowly reflexed margins. Umbilicus, a narrow rim. Height 12-20, diam. 7-14 mm (15.0 × 10.1 mm).

"Jaw arcuate, about 1.7 mm wide, composed of about 18 irregular radial laminae" (Connolly, 1939: 293).

DISTRIBUTION. S Africa. 3 spp.

### *Aillya* Odhner, 1927 Fig. 330

Odhner, 1927: 1. Van Mol, 1978: 1003.

TYPE SPECIES — *Aillya camerunensis* Odhner, 1927; OD.

Shell elliptic, succinoid, thin, fragile, transparent, glass-like, with nacreous lustre, covered with hyaline periostracum, of 2.5-3.5 whorls. Color opaque-white or shell colorless (when fresh). Embryonic sculpture of

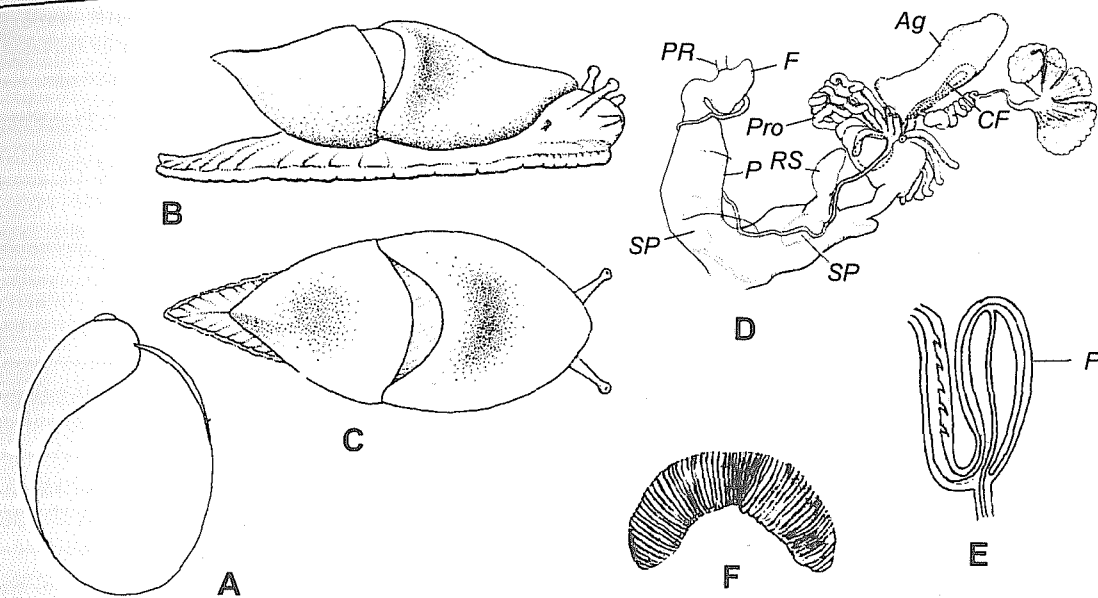


Fig. 330. *Aillya camerunensis* Odhner, 1927.

A — shell. B — animal, lateral view. C — animal, dorsal view. D — reproductive tract. E — interior of epiphallus and flagellum, scheme. F — jaw. A, F — after Odhner, 1927. B, C, D, E — after Van Mol, 1978.

microscopic dots in spiral rows. Postapical whorls with faint radial lines and (sometimes) traces of shallow spiral lines most distinct on base. Aperture ovate, very wide, with thin, simple margins. Umbilicus absent. Height up to 7.3, diam. up to 5.0 mm.

Most of shell covered with enlarged margins of mantle which extended over shell periphery and over spire, and produced posteriorly into large conic process of somewhat spongy texture, directed backward and rightward. In front mantle shaped as broad shield covering head. This shield continued along each side to posterior mantle reflection, to which it is adhered on right side, dorsally, and at left, ventrally, beneath shell.

Cephalopodium with short caudal horn, but caudal pore absent. Sole transversally wrinkled.

Kidney heterurethrous.

Hermaphroditic gland of many elongated acini gathered in a few clusters. Hermaphroditic duct convoluted, forming loop on inner side of albumen gland. Spermoviduct very short. Prostate composed of long,

crowded tubular acini. Since prostatic portion unusually short, vas deferens very long, entering epiphallus at short distance from its apex. Flagellum short, bulky, internally with axial thread (as in many helicarionoids). Inner walls of epiphallus with depressions, in which spines of spermatophore formed. Spermatophores consist of thin-walled smooth ampulla and tail, having not-branching spines directed forward by their tips. Van Mol (1978) found spermatophore in distal portion of penis near atrium, and another — in vagina. Penis enlarged, internally with 2 chambers separated by circular folds; inside chambers there are a few short longitudinal pilasters. Penial retractor attached to flagellum/epiphallus junction. Sac-like uterus may contain single, shelled, large (1 mm in diameter) egg. Free oviduct rather short, vagina expanded, internally with thin longitudinal folds. Spermathecal stalk very short, reservoir ovate.

DISTRIBUTION. W Africa: Cameroon. 2-3 spp.

### Infraorder ACHATINOINEI Schileyko, 1979

Schileyko, 1979: 55 (as Achatinina).

Shell generally achatinoid or succinoid to strongly reduced; small to very large.

Kidney mesothelial or sigmurethral, primary ureter closed, secondary open to closed, in form of ciliary groove.

Jaw stegognathous with modifications, aulacognathous or pycnognathous.

Prostate long, band-like, of numerous compact acini.

### BULIMULOIDEA Tryon, 1867

Tryon, 1867: 164 (as Bulimulinae in Orthalicidae).

Shell medium to very large, usually dextral, ovate to (sub)cylindrical, or (rarely) flat or globose. Aperture simple or toothed.

Jaw primarily and mostly goniognathous, sometimes more or less modified.

Sole of cephalopodium smooth.

Kidney of sigmurethral or mesothelial type.

Reproductive tract without appendages except flagellum; sometimes with accessory gland on penis (some Orthalicidae). Spermathecal stalk mostly without diverticle.

DISTRIBUTION. Two principal centres of diversity: S America and tropical Pacific including Australia.

### BULIMULIDAE Tryon, 1867

Tryon, 1867: 164 (Orthalicidae subf.).

— Bulimidae Guilding, 1828: 168 [rejected name — Bull. Zool. Nomencl., 1957, 16 (17): 312, Opinion 475].

— Berendinae Crosse et Fischer, 1872: 300 (Helicidae subf.).

— Bothriembryontidae Iredale, 1937: 309.

Shell generally elongated to cylindrical, rarely depressed, discoid or reduced, medium-sized to large, solid to thin. Coloration highly variable, often with radial streaks and/or bands. Embryonic whorls smooth or covered with distinct sculpture of radial riblets, spiral cords or pits.

Postembryonic shell surface with radial wrinkles or riblets, often with spiral incised lines. Aperture mostly ovoid, simple or with teeth, sometimes with oblique columellar lamella.

Jaw consisting of many vertical or medially converging imbricating plates crescent except at their outer edges or throughout. Sometimes (secondarily) surface appears merely striated or nearly smooth.

Sole of cephalopodium smooth.

Kidney short, triangular, secondary ureter closed over entire length or partially open.

Talon exposed or hidden in albumen gland. Penis passes into epiphallus without externally visible demarcation, without accessory gland. Penis sheath primarily present. Penial retractor attached (sub)apically. Genital atrium small and shallow.

DISTRIBUTION. S and Central America including West Indies and southern territories of N America; Australia, Tasmania, many islands of tropical Pacific and New Zealand.

REMARK. Breure (1979) divides the family into 5 subfamilies (Bulimulinae, Placostylinae, Odontostominae, Orthalicinae and Amphibuliminae) and gives a table (op. cit., p. 163, tab. 5) summarizing their characters. In that table it is easy to see that included characters overlap and, with a few exceptions, are not diagnostic. Besides, there is a number of exceptions: for example, Breure states that penis in Orthalicinae is conic while in Placostylinae this organ is club-shaped and in other subfamilies it is cylindrical. Actually, penis in Orthalicinae is no more conic than in majority of Bulimulinae. Bulimulinae, Odontostominae and Placostylinae, according to Breure, have sculptured protoconch, although in such taxa as *Eudolichotus*, *Antidrymaeus*, *Anctus*, *Tomigerus* and some others the embryonic whorls are smooth or nearly so. Breure states that in Bulimulinae the jaw consists of many plates, while in Odontostominae it is composed of few plates. In reality, the numbers of jaw plates in both taxa widely overlap. At the same time, Bulimininae and Odontostominae are closer to each other than any of them is to some other subfamilies. Therefore, I consider Bulimulidae as composed of 3 subfamilies (Bulimulinae, Peltellinae and Placostylinae), and Bulimulinae as consist-

ing of 3 tribes (Bulimulini, Simpulopsini trib. nov. and Odontostomini). Besides, I separate Orthalicidae as a family on the basis of essential characters (presence of broad genital atrium, penial gland, and columnar structure of jaw plates); in addition, the shell of Orthalicidae is generally also rather characteristic.

### BULIMULINAE Tryon, 1867

Embryonic whorls primarily sculptured, but sometimes sculpture reduced or absent. Aperture with or without teeth.

Inner structure of jaw plates amorphous, their surface smooth.

Talon mostly rather long, slender. Flagellum present. Penis long, cylindrical. Penis sheath present or absent. Spermathecal stalk long to reduced.

DISTRIBUTION. As of family.

### Bulimulini Tryon, 1867

Aperture mostly toothless, rarely with more or less strong columellar lamella and palatal tooth.

Penis sheath generally present. Spermathecal stalk long to (rarely) shortened, without blind process.

DISTRIBUTION. As of family.

### *Plekocheilus* Guilding, 1828.

Guilding, 1828: 532.

— *Caprella* Guilding, 1824: 341 (nom. praec., non Lamarck, 1801; t.-sp. *Carychium undulatum* Leach, 1814; monotypy).

— *Plekocheilus* Swainson, 1833: pl. 103 (nom. err. pro *Plekocheilus* Guilding, 1828).

— *Plekocheilus* Beck, 1837: 54 (t.-sp. *Voluta aurissileni* Born, 1778; monotypy).

— *Plekocheilus* Albers, 1850: 151 (nom. err. pro *Plekocheilus* Guilding, 1828).

— *Plekocheilus* Gray, 1850: pl. 74, fig. 1 (nom. err. pro *Plekocheilus* Guilding, 1828).

Breure, 1979: 24.

TYPE SPECIES — *Caprella undulata* Leach, 1814 (= *Voluta aurissileni* Born, 1778); monotypy.

Shell more or less ovate or fusiform,

thin to rather solid, of 5-6 slightly convex whorls; body whorl descending in front. Color whitish to corneous, with radial zig-zag streaks or oblique spiral series of spots. Embryonic whorls granulate, pitted or radially wrinkled. Postnuclear sculpture mallear or of irregular weak radial lines; sometimes there are small hollow periostracal cavities. Aperture subvertical, in general ovate, with thickened, slightly expanded and reflexed margins; columellar margin smooth or with oblique rounded lamella. Umbilicus, a narrow slit or absent.

Kidney broadly triangular, secondary ureter closed. Main pulmonary vein prominent, side veins strongly developed, especially at anterior end where they ramified, with one or two short vessels parallel to principal vein.

Flagellum mostly slender and long, rarely short and stout. Penis subcylindrical, sometimes swollen proximally; no visible demarcation between penis and epiphallus. Penis sheath present or absent. Vagina relatively short. Spermathecal stalk more or less tapering, reservoir elongated-globose.

DISTRIBUTION. S and Central America (West Indies, Venezuela, Brazil, Bolivia, Peru, Ecuador, Colombia, Panama).

REMARK. Breure (1979: 25) states: "The differences between the subgenera are but slight and the division of *Plekocheilus* into five subgenera is only tentative. Especially the status of *Sparnotion* Pilsbry, 1944, is uncertain".

### *Plekocheilus* (*Aeropictus*) Weyrauch, 1967) Fig. 331

Weyrauch, 1967b: 465.

— *Orcesiellus* Weyrauch, 1967b: 468 [*Plekocheilus* subg.; t.-sp. *Plekocheilus* (*Orcesiellus*) *tenuissimus* Weyrauch, 1967; OD].

TYPE SPECIES — *Bulimus veranyi* L. Pfeiffer, 1848; OD.

Shell elongated-ovate, rather thin, of 5-6 slightly convex whorls. Color light-brown, uniform or with radial or spiral rows of spots of darker brown. Embryonic whorls granulate or radially wrinkled. Post-embryonic shell surface smooth or finely granulate, with hollow periostracal cavities. Aperture broadly elongated-ovate, with slightly thickened expanded margins; co-



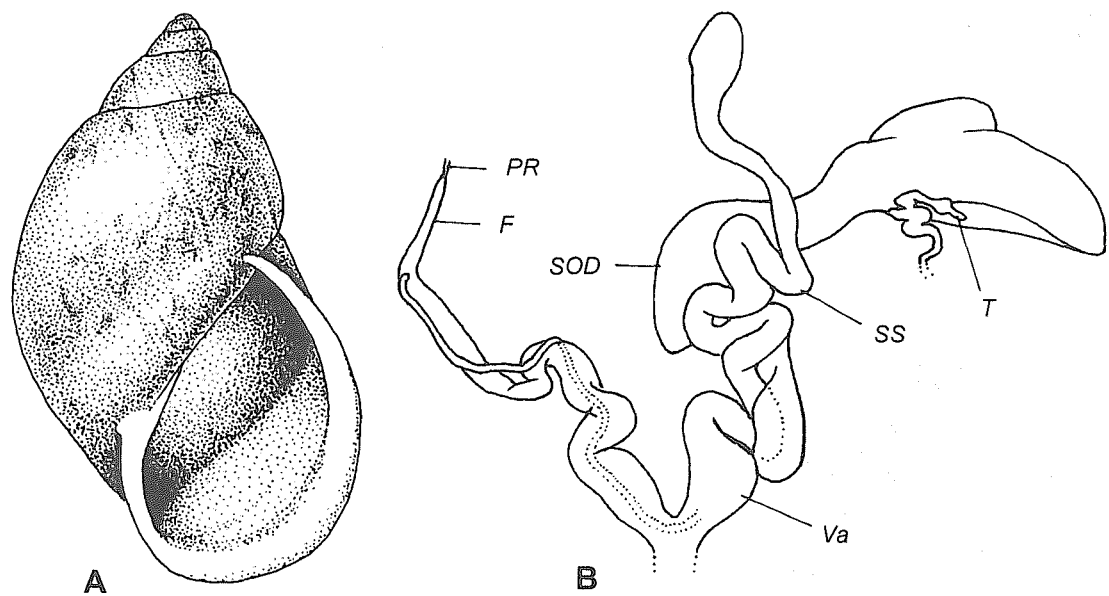


Fig. 331. *Plekocheilus (Aeropictus) veranyi* (L. Pfeiffer, 1848).  
A — shell: "Andes Columbie". Bern, coll. Shuttleworth, No. 621. B — reproductive tract.  
After Breure, 1978.

lumellar side simple. Height 26-32, diam. 15-18 mm (31.0 × 17.6 mm).

Talon short, exposed. Vas deferens not tightly adherent to penis. Flagellum short to very short. Epiphallus passes without external differentiation into penis. Penis sheath present or absent (in type species absent). Spermathecal stalk of various length.

DISTRIBUTION. Venezuela, Brazil, Ecuador, Colombia. 16 spp.

*Plekocheilus (Plekocheilus s. str.)*  
Fig. 332

Shell subglobose to elongated-globose, solid to moderately solid. Color brown, often with reddish or greenish hue and darker radial zigzag streaks; aperture margins usually blackish or dark-brown. Embryonic whorls finely granulate, postembryonic shell surface covered with irregular radial wrinkles and elements of malleation. Aperture ovate, with expanded and reflexed margins; columellar margin with rounded subvertical lamella. Umbilicus, a narrow slit. Height 38-65, diam. 20-34 mm (51.0 × 29.6 mm).

DISTRIBUTION. West Indies (St. Vin-

cent, Barbados), Venezuela, ?French Guyana, Ecuador, Colombia. 16 spp.

*Plekocheilus (Eudolichotis) Pilsbry, 1896*  
Fig. 333

Pilsbry, 1896 (1895-1896): 108 (*Auris* subg.).

— *Antitragus* Oberwimmer, 1931: 192, 194 [*Auris* subg.; t.-sp. *Auris (Antitragus) gibber* Oberwimmer, 1931; OD].

— *Eudolichotus* Solem, 1960: 417 (nom. err. pro *Eudolichotis*).

Breure, 1979: 33.

TYPE SPECIES — *Bulimus distortus* Bruguière, 1789; OD.

Shell elongated-ovate to fusiform, moderately thin to rather solid, of 5-6 slightly convex whorls. Color whitish to yellowish with brown radial streaks and variegation. Embryonic whorls granulate, later with radial wrinkles or diamond-shaped granules. Aperture elongated-ovate, basal and palatal margins rounded or more or less produced. Aperture narrow, with thickened, expanded and reflexed margins. Columella with strong rounded subvertical lamella. Height 30-60, diam. 12-23 mm (59.0 × 22.2 mm).

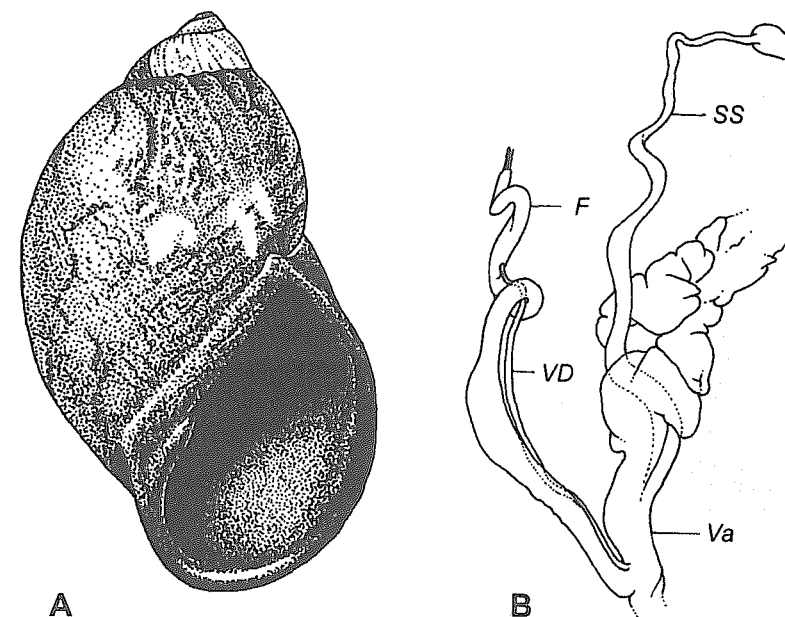


Fig. 332. A — ! *Plekocheilus (Plekocheilus) blainvillanus* (L. Pfeiffer, 1848).  
Shell: "Central America". Moscow No. L-1269. B — *Plekocheilus (Plekocheilus) aurissileni* (Born, 1778). Reproductive tract. After Breure, 1978.

Talon exposed, digitiform but somewhat coiled. Vas deferens tightly attached to vagina, penis and epiphallus, but loosely fastened near atrium. Flagellum short, slender, internally with strong longitudinal fold. Epiphallus not long, externally more or less separated from penis by constriction, internally with longitudinal folds. Penis long, slender, its upper portion internally with complex series of high, crenulate, glandular, longitudinal folds. Penial retractor weak, inserted at apex of flagellum. Spermathecal stalk long, slender, reservoir small.

DISTRIBUTION. West Indies (Grenada, Trinidad), Venezuela, Guyana, Surinam, French Guyana, Brazil (Para State), Colombia, Panama. 25 spp.

?*Plekocheilus (Sparnotion) Pilsbry, 1944*  
Fig. 334

Pilsbry, 1944: 30.

TYPE SPECIES — *Bulimus hauxwelli* Crosse, 1872; monotypy.

Shell fusiform, rather solid, of 4.5 flattened whorls. Color straw to light-brown, with darker irregular streaks. Embryonic

whorls irregularly pitted. Postnuclear surface with radial wrinkles, minute irregular papillae and hollow subperiostracal cavities. Aperture narrowly elongated-ovate, with shortly reflexed margins; basal margin produced. Columellar margin with smoothed oblique lamella. Height 48-50, diam. 17-19 mm (49.8 × 18.2 mm).

DISTRIBUTION. Peru, Dept. Loreto. 1 sp.

*Dryptus* Martens in Albers, 1860  
Fig. 335

Martens in Albers, 1860: 194 (*Bulimus* subg.).  
Breure, 1979: 34.

TYPE SPECIES — *Bulimus moritzianus* L. Pfeiffer, 1847; OD.

Shell elongated-ovate, solid to very solid, of about 5 rather convex whorls; suture crenulate. Color uniformly chestnut or yellowish to light-corneous with dark-brown radial streaks. Embryonic whorls smooth, postembryonic surface covered with fine granulation to smoothed malleation. Aperture elongated-ovate, with broadly expanded and reflexed margins. Columella with strong, rounded, subvertical lamella. Umbilicus absent or as a nar-

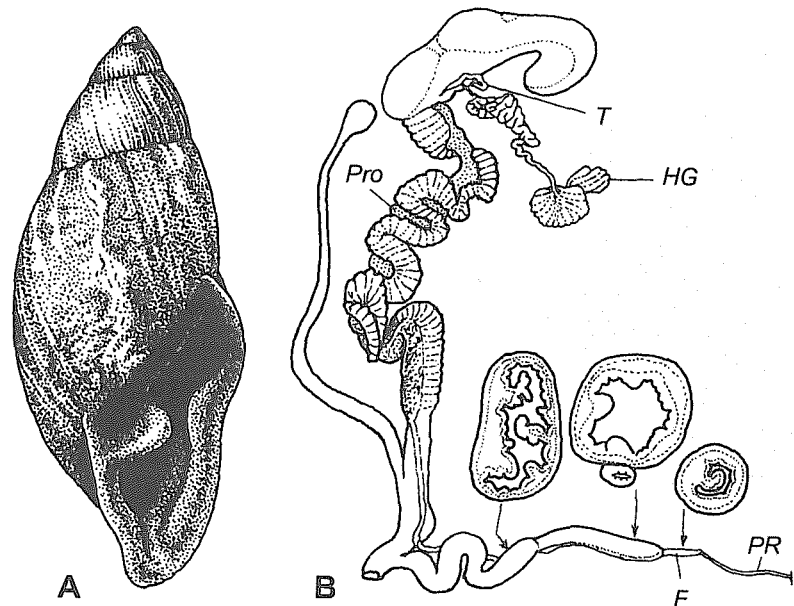


Fig. 333. *Plekocheilus (Eudolichotis) distortus* (Bruguère, 1789).  
A — shell: Porto Cabello, Venezuela. Moscow No. Lc-21369. B — reproductive tract. After Baker, 1926.

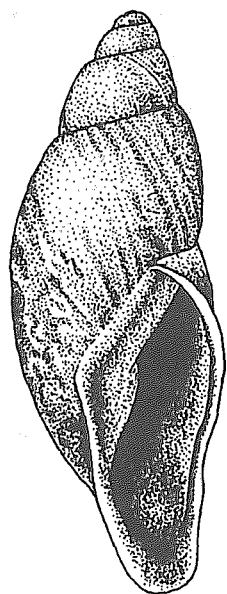


Fig. 334. *Plekocheilus (Sparnotion) hauxwelli* (Crosse, 1872).  
No data. Phil. No. 113571.

row slit. Height 50-110, diam. 30-65 mm (76.0 × 41.0 mm).

Kidney short, roughly triangular, both ureters complete.

Talon finger-shaped, at basal portion of albumen gland. Vas deferens embedded in wall of free oviduct, attached along penis and lower portion of epiphallus by thin membrane and a little swollen for some distance before its entrance. Flagellum absent. Epiphallus long, with glandular walls, not separated from penis externally. Penis long, relatively slender and tapered towards epiphallus, with thick, partly glandular walls; internally with 4 longitudinal folds. Penial retractor inserted terminally. Vagina much longer than free oviduct. Spermathecal stalk comparatively short, swollen basally, reservoir ovate to kidney-shaped.

DISTRIBUTION. Venezuela, ?Peru, Colombia. 17 spp.

*Auris* Spix, 1827  
Fig. 336

Spix, 1827: 13.

— *Pachyotus* Beck, 1837: 56 [part.; *Bulimus* subg.;

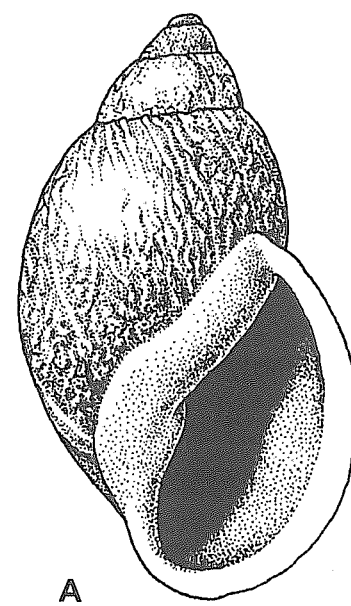


Fig. 335. A — *Dryptus moritzianus* (L. Pfeiffer, 1847).  
Shell: Venezuela. Phil. No. 50485.  
B — ! *Dryptus pardalis* (Férussac, 1821). Reproductive tract. After Baker, 1926.

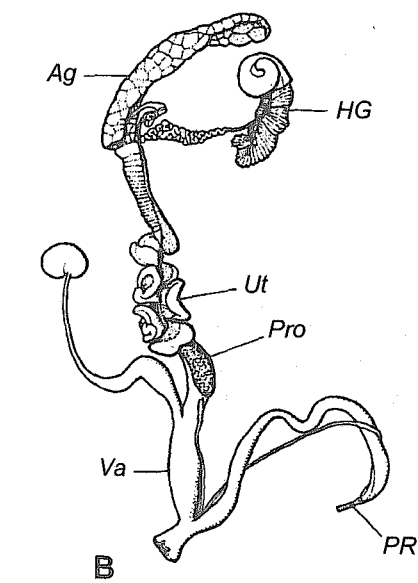
t.-sp. *Bulimus melanostomus* (sic!) Swainson, 1820; SD Herrmannsen, 1847].

TYPE SPECIES — *Bulimus melastomus* Swainson, 1820; SD Gray, 1847.

Shell ovate, very solid, of 4.5-5.5 rather convex whorls. Coloration consists of whitish, brownish or pink background and darker spots and/or radial streaks; aperture usually black. Embryonic whorls practically smooth, postnuclear sculpture of fine granulation represented by elongated, short, radially directed wrinkles; there are also folds below suture. Aperture broadly ovate, with thickened, expanded and reflexed margins, often bearing callous flange. Columellar lamella rather weak. Height 33-60 diam. 20-35 mm (44.1 × 25.9 mm).

Kidney broadly triangular, secondary ureter completely closed. Main pulmonary vein and side veins well developed and prominently ramified at anterior end, where two veins situated parallel to main pulmonary vein.

Talon embedded to albumen gland. Flagellum relatively long, more or less tapering. Penis subcylindrical, passing without external demarcation into epiphallus. Penial sheath short. Folds of spermoviduct



arranged parallel to long axis of this duct. Spermathecal stalk stout, subcylindrical, reservoir globose.

DISTRIBUTION. Brazil. About 20 spp.

*Thaumastus* Martens, 1860

Martens in Albers, 1860: 215 (*Buliminus* subg.).

— *Orphnus* Albers, 1850: 146 (nom. praeocc., non McLeay, 1819 (Coleoptera); *Bulimus* subg.; t.-sp. *Helix taunaisii* Férussac, 1821; SD Martens in Albers, 1860).

— *Orphaicus* Schaufuss in Paetel & Schaufuss, 1869: 14 (nom. nov. pro *Orphnus* Albers, 1850).

— *Tatutor* Jousseume, 1887: 6 (t.-sp. *Tatutor tatutor* Jousseume, 1887; tautonymy).

— *Tholus* Strebel, 1909: 137 [t.-sp. *Orthalicus (Porphyrobaphe) buckleyi* Higgins, 1872; monotypy].

— *Pachytholus* Strebel, 1909: 138 [*Tholus* subg.; t.-sp. *Tholus (Pachytholus) pseudoiostomus* Strebel, 1909; SD Zilch, 1960].

Breure, 1979: 37.

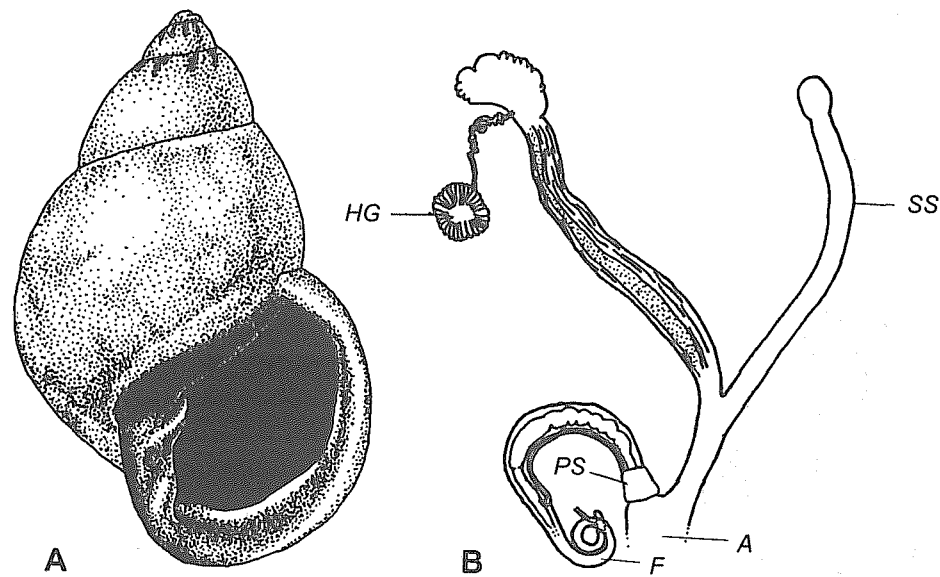


Fig. 336. A — *Auris melastomus* (Swainson, 1820). Brazil. Phil. No. 3380. B — reproductive tract. After Jurberg, 1964, from Breure, 1979.

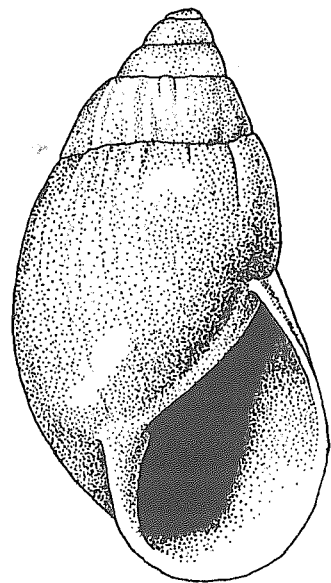


Fig. 337. *Thaumastus (Thaumastiella) sarcochrous* (Pilsbry, 1897). Rio Chusgon, 1600-2150 m a.s.l., N Peru. Senck. No. 157535.

TYPE SPECIES — *Buliminus hartwegi* L. Pfeiffer, 1846; OD.

Shell elongated-ovate, rather solid, of 4-7 scarcely to slightly convex whorls. Apex blunt. Color brownish-horny or olivaceous, uniform or with darker radial streaks or spiral bands. Embryonic whorls nearly smooth, rather vaguely pitted or with fine radial wrinkles; postnuclear sculpture of irregular radial wrinkles and widely spaced spiral incised lines; sometimes fine granulation present. Aperture ovate, with thin or somewhat thickened margins. Umbilicus, a narrow slit, or absent.

DISTRIBUTION. Venezuela, Brazil, Bolivia, Peru, Ecuador.

*Thaumastus (Thaumastiella)*  
Weyrauch, 1956)  
Fig. 337

Weyrauch, 1956: 11. Breure, 1979: 41.

TYPE SPECIES — *Bulimulus sarcochrous* Pilsbry, 1897; OD.

Shell ovate-conic, solid, of 5-6 slightly convex whorls. Color uniformly light-corneous or with whitish band, narrowly

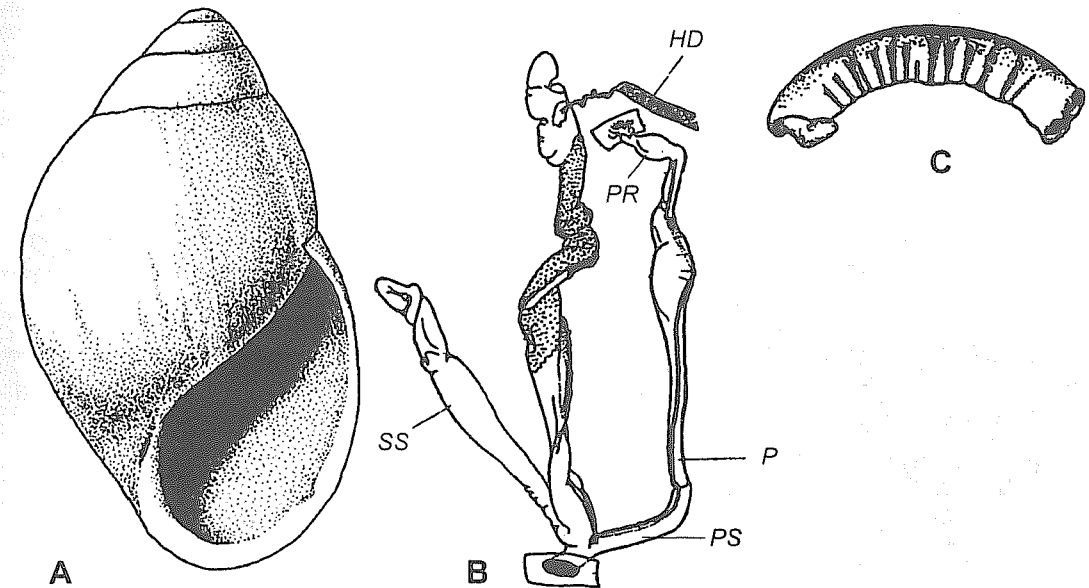


Fig. 338. *Thaumastus (Paeniscutalus) incarum* (Pilsbry, 1944). A — shell: Huaraz, Peru, 3000-3200 m a.s.l. Holotype. Phil. No. 180677. B — reproductive tract (hermaphroditic gland omitted). C — jaw. After Wurtz, 1947.

brownish below. Embryonic sculpture of distinct radial riblets, which become wavy, anastomosing and irregularly broken up into bead-like to oblong granules on first postnuclear whorl. Postembryonic shell surface covered with irregular coarse radial wrinkles; middle whorls sometimes with spiral striae, especially at suture. Aperture generally ovate, with slightly thickened simple margins. Umbilical slit narrow. Height 29-30, diam. 15-16 mm (29.2 × 15.4 mm).

Kidney broadly triangular. Secondary ureter closed. Main pulmonary vein and side veins moderately developed.

Flagellum relatively short and tapering. Penis slightly swollen above proximal end of sheath, but otherwise more or less cylindrical and passing without external differentiation into epiphallus.

DISTRIBUTION. Peru. 5 spp.

*Thaumastus (Paeniscutalus)*  
Wurtz, 1947)  
Fig. 338

Wurtz, 1947: 12 (*Bulimulus* subg.). Breure, 1979: 42.

TYPE SPECIES — *Megalobulimus (Microborus) incarum* Pilsbry, 1944; monotypy.

Shell ovate, rather solid though not thick, of about 4 flattened whorls. Color white (dead shell), uniform. Embryonic whorls with indistinct radial wrinkles, which are partly broken into oblong granules. Postembryonic whorls with fine, irregular radial striation. Aperture ovate, with slightly thickened and narrowly expanded margins. Columellar margin concave. Umbilicus, a narrow slit. Height 22-35, diam. 16-21 mm (35.0 × 20.8 mm).

Jaw composed of about 14 irregular plaits, not converging in middle to form triangular area.

Kidney broadly triangular. Secondary ureter completely closed. Main pulmonary vein and side vessels prominent; vein branched at anterior end, where vein situated parallel to principal.

Talon short, not embedded in albumen gland. Vas deferens entering epiphallus one third of length below apex of epiphallus (base of flagellum), closely bound to epiphallus and penis and passing through penial sheath. Flagellum rather short, relatively thick. Penis subcylindrical, passes into epiphallus without external differen-



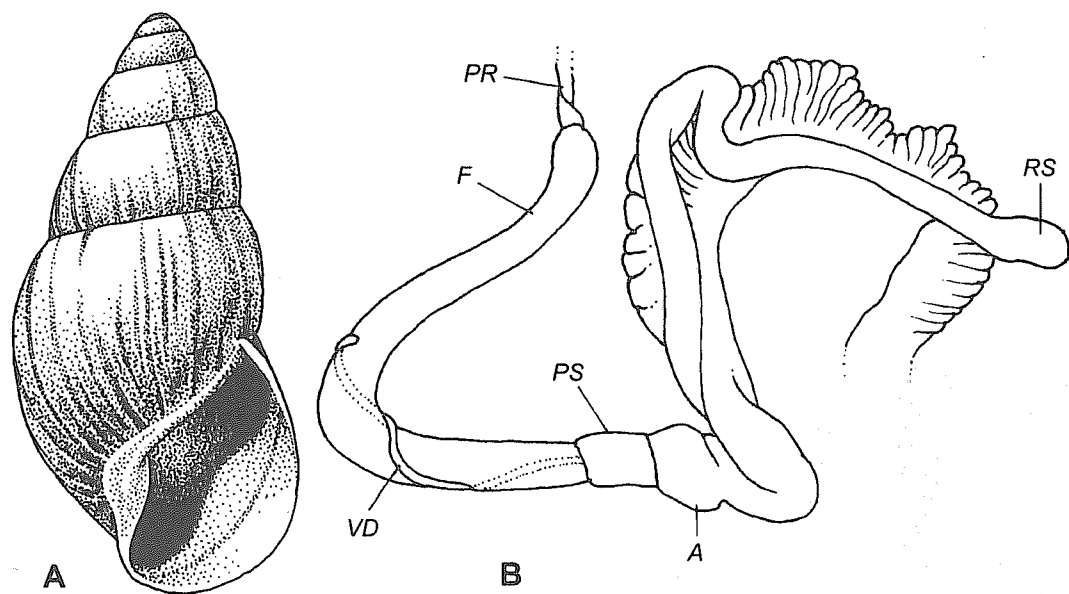


Fig. 339. A — *Thaumastus (Thaumastus) hartwegi* (L. Pfeiffer, 1846). Shell: Ecuador. Phil. No. 184092. B — ! *Thaumastus (Thaumastus) sangoae* (Tschudi, 1852). Reproductive tract. After Breure, 1978.

tion. Internally penis and epiphallus with longitudinal plicae which scarcely interrupted at very slight constriction between these two ducts. Penial retractor attached terminally. Free oviduct rather short, vagina extremely short. Spermathecal duct subcylindrical, reservoir elongated-truncated to globose.

DISTRIBUTION. Peru. 2 spp.

*Thaumastus (Thaumastus s. str.)*  
Fig. 339

Shell elongated, solid, of 5-7 hardly convex whorls. Color light-corneous to chestnut, mostly with darker radial streaks or spiral band (rarely with two bands). Embryonic whorls with fine, close radial wrinkles or riblets. Postembryonic shell surface covered with irregular radial striation. Aperture relatively small, ovate, with slightly expanded margins. Umbilicus closed. Height 50-100, diam. 26-45 mm (73.0 × 35.2 mm).

Kidney broadly triangular. Secondary ureter closed. Main pulmonary vein prominent and ramified at anterior end, where parallel vein is situated.

Flagellum long, subcylindrical to tapering, passing without external demarcation into epiphallus. Penis rather thick, more or less cylindrical. Penis sheath normally short. Vagina relatively short. Spermathecal duct subcylindrical, reservoir elongated-truncated to globose.

DISTRIBUTION. Brazil, Bolivia, Peru, Ecuador. 33-34 spp.

*Thaumastus (Quechua* Strebel, 1910)  
Fig. 340

Strebel, 1910: 17. Breure, 1979: 45.

TYPE SPECIES — *Bulimus salteri* Sowerby, 1890; OD.

Shell elongated-ovate, rather solid, of about 6 slightly convex whorls. Color brownish or greyish, with light radial streaks and spots. Embryonic whorls with radial riblets and wrinkles, more or less anastomosing. Surface of later whorls with irregular coarse radial wrinkles and usually weak spiral grooves. Aperture elongated-ovate, with simple margins. Umbilicus absent or slit-like. Height 67-83, diam. 35-41 mm (83.0 × 40.8 mm).

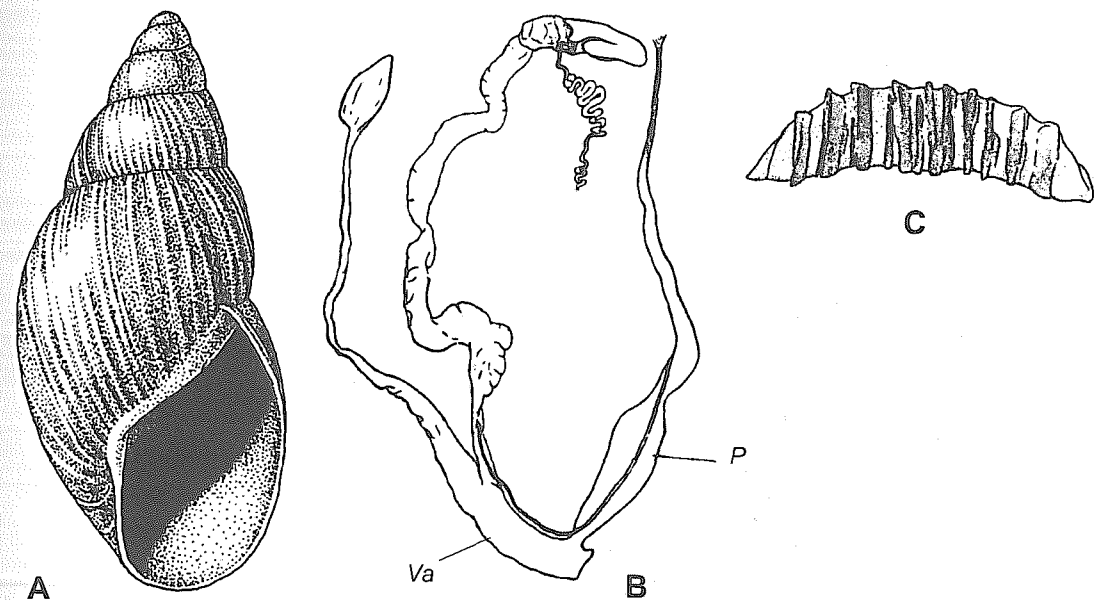


Fig. 340. *Thaumastus (Quechia) salteri* (Sowerby, 1890). A — shell: Chofa, Peru. Phil. No. 183257. B — reproductive tract. C — jaw. After Zilch, 1953.

Jaw bears irregular, parallel, protruding plaits, without central triangular area.

Flagellum more or less tapering. Epiphallus subcylindrical, with weak constriction at boundary with penis. Penis broadly subcylindrical, without sheath. Vagina relatively long. Spermathecal stalk subcylindrical, rather short, with somewhat expanded basal portion; reservoir globose.

DISTRIBUTION. Peru. 5 spp.

*Thaumastus (Atahualpa* Strebel, 1910)  
Fig. 341

Strebel, 1910: 19 (*Thaumastus* subg.). Breure, 1978: 30 (syn. of *Thaumastus s. str.*).

TYPE SPECIES — *Thaumastus (Atahualpa) brunneus* Strebel, 1910 (= *Helix inca* Orbigny, 1835); monotypy.

Shell ovate-conic, moderately solid, of 6-7 slightly convex whorls. Color greenish-olive, aperture margins white. Embryonic whorls practically smooth. Later whorls with distinct spiral lines, dense on early whorls, then becoming more spaced; radial wrinkles irregular, rather coarse. Aperture ovate, its margins somewhat reflexed and

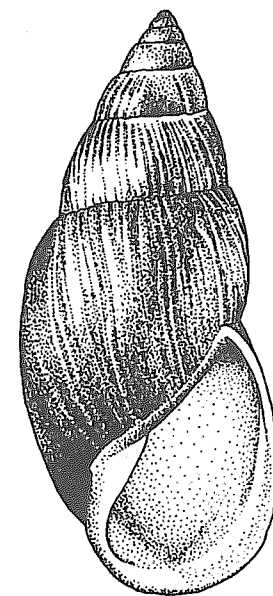


Fig. 341. *Thaumastus (Atahualpa) inca* (Orbigny, 1835). Bolivia. Phil. No. 138106.

a little thickened. Columellar margin widely dilated. There is a deep umbilical crack. Height 50-80, diam. 20-33 mm (80.0 × 32.2 mm).

DISTRIBUTION. Bolivia. 3-4 spp.

*Thaumastus* (Kara) Strebel, 1910  
Fig. 342

Strebel, 1910: 16. Breure, 1979: 38.

TYPE SPECIES — *Bulimus thompsoni* L. Pfeiffer, 1845; OD.

Shell oblong-ovate, solid, glossy, of about 5 moderately convex whorls. Color yellow to light-corneous, usually with darker radial streaks. Embryonic whorls pit-reticulated, postembryonic surface covered with irregular radial rounded wrinkles and sometimes with vague spiral grooves. Aperture ovate, with thin and simple margins. Umbilicus completely closed. Height 40-70, diam. 19-33 mm (53.0 × 25.3 mm).

DISTRIBUTION. Peru, Ecuador. 9 spp.

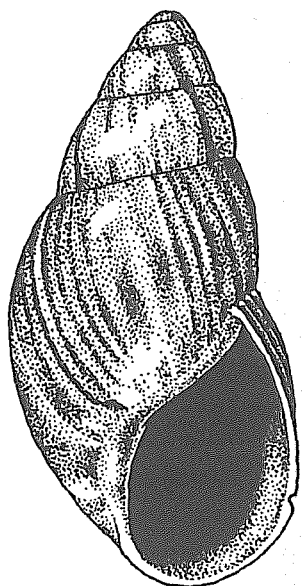


Fig. 342. *Thaumastus* (Kara) *thompsoni* (L. Pfeiffer, 1845). Ecuador. Phil. No. 66442.

*Thaumastus* (*Scholvienia*) Strebel, 1910  
Fig. 343

Strebel, 1910: 20 (pro gen.).

—? *Thomsenia* Strebel, 1910: 26 (*Scholvienia* subg.; t.-sp. *Thomsenia claritae* Strebel, 1910; monotypy).

Breure, 1979: 40.

TYPE SPECIES — *Bulimus bitaeniatus* Nyst, 1845; SD Pilsbry, 1932.

Shell elongated-ovate, moderately solid, of 5-6 slightly to moderately convex whorls. Color brown or chestnut-brown, uniform or with 1-2 yellowish spiral bands: subsutural (may be absent) and peripheral. Embryonic whorls with distinct radial wrinkles and short waved riblets. Postembryonic sculpture of irregular radial coarse wrinkles. Aperture ovate, with simple thin margins. Columellar margin often with vestigial subvertical lamella. Umbilicus, a narrow slit. Height 28-77, diam. 13-36 mm (44.2 × 20.2 mm).

Kidney broadly triangular, secondary ureter closed. Main pulmonary vein prominent, ramified at anterior end, where parallel vein situated.

Flagellum comparatively long, tapering. Penis rather thick, subcylindrical, without

external demarcation passing into epiphallus. Penial sheath normally developed, short. Penial retractor inserted to flagellum apically. Vagina relatively short. Spermathecal shaft more or less cylindrical or swollen in middle part, its upper portion tapering towards elongated-globose reservoir.

DISTRIBUTION. Brazil, Bolivia, Peru, Columbia. 22 spp.

REMARK. Breure (1979: 46), discussing the taxonomical position of *Thomsenia* Strebel, writes: "Only the type specimen [of *Thomsenia claritae* — A. Sch.] was known and this is probably destroyed, together with most of Strebel's types, during the 1939-1945 war... Judging from the description this taxon is most probably a synonym of *Scholvienia* Strebel, 1910...".

*Lopesianus* Weyrauch, 1958  
Fig. 344

Weyrauch, 1958: 120. Breure, 1979: 46 (nom. inquirendum).

TYPE SPECIES — *Lopesianus crenulatus* Weyrauch, 1958; OD.

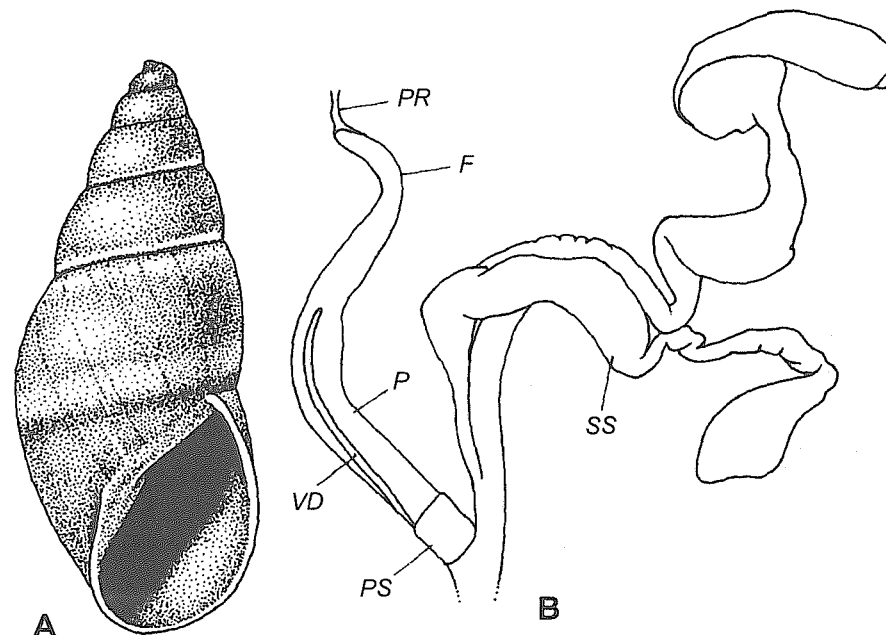


Fig. 343. *Thaumastus* (*Scholvienia*) *bitaeniatus* (Nyst, 1845). A — shell: Cauaca River, Columbia. Phil. No. 184102. B — reproductive tract. After Breure, 1978.

Shell elongated-ovate, thin, fragile, of 6.5-6.7.5 moderately convex whorls. Color uniformly olivaceous. Embryonic sculpture of few smoothed spiral cords. Postembryonic whorls covered with weak radial wrinkles becoming stronger at suture, making it crenulate. Aperture pointed-ovate, with thin and simple margins. Umbilical rim very narrow and short. Height 19.9-23.8, diam. 9.1-10.6 mm (23.7 × 10.6 mm).

DISTRIBUTION. Brazil. 1 sp.

*Bostryx* Troschel, 1847

Troschel, 1847: 49 (*Bulimus* subg.).

— *Naesiotellus* Weyrauch, 1967a: 414 [*Naesiotus* subg.; t.-sp. *Naesiotus* (*Naesiotellus*) *latecolumellaris* Weyrauch, 1967; OD].

Breure, 1979: 46.

TYPE SPECIES — *Bulimus* (*Bostryx*) *solutus* Troschel, 1847; monotypy.

Shell of various shape: conic, turritid, elongated-ovate, globose, discoidal; rather thin, of 5-12 flattened to rather convex whorls; body whorl evenly rounded or (rarely) angled or even carinate. Color

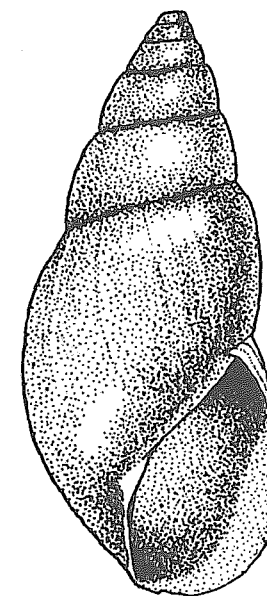


Fig. 344. *Lopesianus crenulatus* Weyrauch, 1958. Cabo Frio, Arraial-Prainha, Brazil. Holotype. Senck. No. 156356.

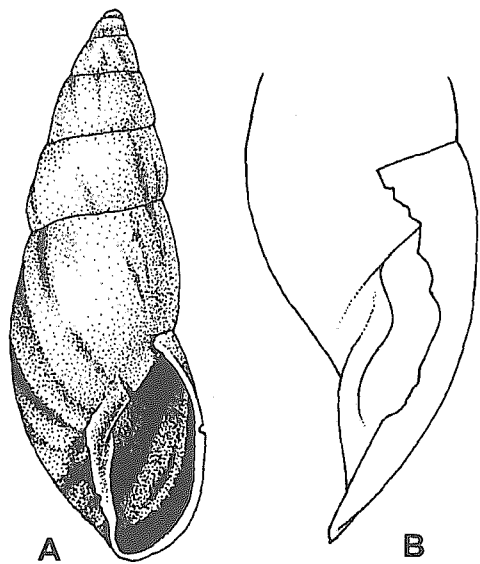


Fig. 345. *Bostryx (Kionoptyx) sagasteguii* (Haas, 1966).  
A — apertural view: Marcabal, Prov. Huamachuco, Dept. La Libertad, Peru. Holotype. Chicago No. 131682. B — lateral view. After Haas, 1966.

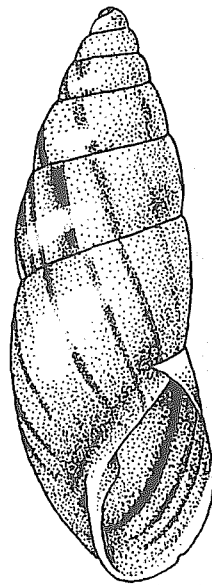


Fig. 346. *Bostryx (Dentaxis) dentaxis* (Pilsbry, 1901).  
Peru. Holotype. Phil. No. 25653.

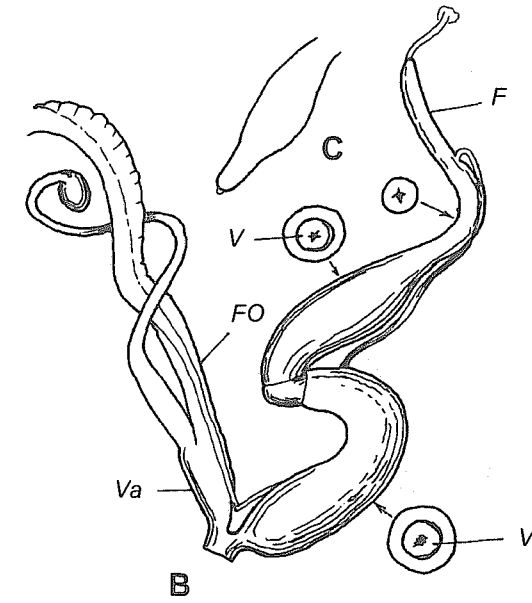
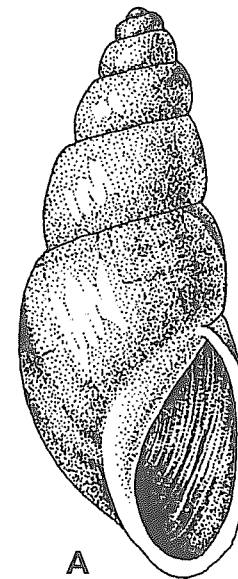


Fig. 347. *Bostryx (Scansicohlea) bromeliarum* (Pilsbry, 1930).  
A — shell: Along Rio Chillón near Viscas, Dept. of Lima, Peru. Holotype. Phil. No. 142536. B — reproductive tract. C — verge. After Pilsbry, 1930b.

whitish, brownish or bluish, uniform or with darker spiral lines and/or spots. Embryonic whorls with numerous, fine spiral lines, sometimes smooth or with indistinct radial wrinkles or riblets. Postapical sculpture of weak irregular radial wrinkles. Aperture ovate to triangular-ovate, rarely adnate; margins simple or slightly expanded. Columellar margin usually simple, sometimes with lamella within last whorl. Umbilicus open, minute to broad.

Jaw typically stegognathous, consists of thin converging plaits, with central triangular area.

Kidney triangular, generally more or less narrowed. Secondary ureter closed or partially open. Main pulmonary vein moderately to well developed, side veins variously developed.

Hermaphroditic duct only slightly or not convoluted. Talon exposed, vermiform, heavily pigmented (black). Vas deferens tightly adherent to vagina, then passes under penis sheath, then adheres to penis. Flagellum slender, more or less long. Lower part of penis internally with 4 strong longitudinal pilasters and has shape of 4-rayed

star in cross-section; more or less developed tubular verge present at level of upper border of penis sheath. Upper part of penis internally smooth. Lumen of penis lined with two types of epithelium. Penis sheath well developed. Free oviduct very short, vagina long. Spermathecal duct subcylindrical, reservoir small, globose.

DISTRIBUTION. N Argentina, Bolivia, Chile, Peru, Ecuador, ?Venezuela.

REMARK. Breure (1979) does not separate subgenera in this genus because of absence of visible boundaries between different shell types and similar anatomy. Such a situation is characteristic for many mountain regions where phenomenon of neoendemism takes place. I think, Breure is right, nevertheless I tentatively remain some taxa as subgenera to show the conchological variety.

*Bostryx (Kionoptyx) Haas, 1966*  
Fig. 345

Haas, 1966: 239 (pro gen.). Breure, 1979: 49 (syn. of *Bostryx* s. str.).

TYPE SPECIES — *Kionoptyx sagasteguii* Haas, 1966; OD.

Shell ovate-fusiform, rather thin, translucent, shining, of 9.5 flattened whorls. Color white with a few blackish-brown streaks and band encircling umbilical rim. Embryonic whorls with spiral lines formed by microscopic, punctiform impressions. Subsequent whorls without regular sculpture. Aperture pointed-ovate, with a little reflexed, slightly thickened margins. Columella with deeply lying, short, spiral lamella. Height 32-33, diam. 9.7-12.5 mm (33.0 × 9.8 mm).

DISTRIBUTION. Peru. 1 or 2 spp.

*Bostryx (Dentaxis) Pilsbry, 1902*  
Fig. 346

Pilsbry, 1902 (1901-1902): xxxi.

— *Bilamelliferus* Weyrauch, 1958: 118 (t.-sp. *Bulimulus tschudii* Troschel, 1852; OD).

— ? *Floreziellus* Weyrauch, 1967b: 488 (t.-sp. *Floreziellus florezi* Weyrauch, 1967; OD).

Breure, 1979: 49 (syn. of *Bostryx*).

TYPE SPECIES — *Bulimulus dentaxis* Pilsbry, 1901; monotypy.

Shell (sub)cylindrical, rather thin, shining, of about 7-9 slightly convex whorls. Color white, with brown irregular radial streaks and/or a few bands. Embryonic sculpture of fine microscopical spiral striae. Postnuclear whorls look smooth, with very delicate radial wrinklets. Aperture elongated-ovate, with thin, simple margins; columellar margin bears distinct spiral lamella, which may go up for several whorls; palatal tooth sometimes present. Umbilicus, a narrow crack. Height 7.6-27.7, diam. 3.0-8.0 mm (17.6 × 5.8 mm).

DISTRIBUTION. Peru. 4-5 sp.

REMARK. Breure (1979) believes that the genus *Floreziellus* Weyrauch is a synonym of *Bostryx*, while Richardson (1991) attributes this taxon to Microceraminae (Urocoptidae). Originally, the monotypical genus *Floreziellus* was assigned to Urocoptidae or Subulinidae. I had no material on *Floreziellus florezi*, but, judging by photo given by Weyrauch (1967b, pl. I, figs. 7-17), I think that Breure's suggestion is more correct. Above all, *F. florezi* occurs in Peru,

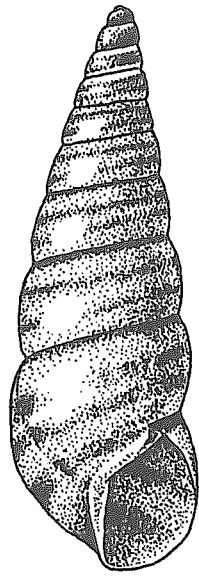


Fig. 348. *Bostryx (Geopyrgus) turritus* (Broderip, 1832).  
W of Trujillo, 6000 ft., Samne, Peru. Phil. No. 159910.

i.e. far from range of Microceraminae and other Urocoptidae.

*Bostryx (Scansicochlea) Pilsbry, 1930*  
Fig. 347

Pilsbry, 1930b: 358 (*Bulimulus* subg.).

— *Scansicochlea* Thiele, 1931: 656 (nom. err. pro *Scansicochlea* Pilsbry, 1930).

Breure, 1979: 49 (syn. of *Bostryx* s. str.).

TYPE SPECIES — *Bulimulus bromeliarum* Pilsbry, 1930; OD.

Shell subfusiform, thin, fragile, slightly translucent, shining, of 6-7 convex whorls. Color cinnamon, variegated with a few irregular white streaks. Embryonic whorls with microscopic, silky, spiral striation. Later whorls without regular sculpture; body whorl with very delicate, widely spaced periostracal spiral cordlets. Aperture narrowed, oblong-ovate, with thin, shortly reflexed margins; columellar margin dilated. Umbilicus dot-like. Height 12-15, diam. 5-6 mm (13.7 × 5.3 mm).

Vas deferens adheres closely to epiphal-

lus, penis, vagina, and free oviduct. Flagellum comparatively long, rounded at tip. Epiphallus short, slender. Penis very large, its distal half enveloped with thick-walled, muscular sheath, with narrow lumen. Proximal half longer, fusiform, its lumen filled by large, closed, spindle-shaped verge. Free oviduct a little longer than vagina. Spermathecal stalk long, somewhat swollen basally, reservoir small, subglobular.

DISTRIBUTION. Peru. About 10 nominal spp.

*Bostryx (Geopyrgus) Pilsbry, 1896*  
Fig. 348

Pilsbry, 1896: 114 (nom. nov. pro *Pyrgus* Albers, 1850).

— *Pyrgus* Albers, 1850: 177 (nom. praeocc., non Hübner, 1816; *Bulimus* subg.; t.-sp. *Bulimus turritus* Broderip, 1832; monotypy).

— *Geoceras* Pilsbry, 1896 (1895-1896): 136 [*Bulimulus (Bostryx)*, sect.; t.-sp. *Bulimus columellaris* Reeve, 1849; OD].

— *Phenacotaxis* Dall, 1912: 7 (t.-sp. *Bulimulus infundibulum umbilicatellus* Pilsbry, 1896; OD).

— *Ataxellus* Dall, 1912: 7 [*Phenacotaxis* subg.; t.-sp. *Phenacotaxis (Ataxellus) spiculatus pectinatus* Dall, 1912; OD].

— *Pseudoperonaeus* Weyrauch, 1958: 111 [*Bostryx* subg.; t.-sp. *Bostryx (Pseudoperonaeus) bermudezae* Weyrauch, 1958; monotypy].

— *Multifasciatus* Weyrauch, 1958: 116 (*Bostryx* subg.; t.-sp. *Bulimus subroseus* L. Pfeiffer, 1869; OD).

Breure, 1979: 49 (as syn. of *Bostryx*).

TYPE SPECIES — *Bulimus turritus* Broderip, 1832; OD.

Shell high, elongated-ovate to turreted, moderately thin, slightly translucent, of 9-10 slightly convex whorls. Coloration of white or yellowish background and 3-7 brown bands (rarely uniformly white); apex dark-brown to black. Embryonic whorls smooth or with weak radial wrinklets. Post-nuclear sculpture of delicate, irregular, radial lines and (often) very fine spiral striation. Aperture irregularly round or ovate, slightly oblique, with simple margins; columellar margin vertical, dilated. Umbilicus minute, semicovered. Height 18-38, diam. 7-14 mm (21.0 × 7.2 mm).

DISTRIBUTION. Peru. About 15 spp.

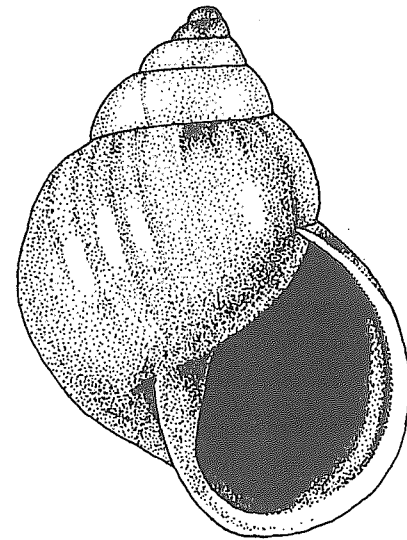


Fig. 349. *Bostryx (Lissoacme) erythrostoma* (Sowerby, 1833).  
Chile. Phil. No. 25487.

*Bostryx (Lissoacme) Pilsbry, 1896*  
Fig. 349

Pilsbry, 1896: 114. Breure, 1979: 49 (syn. of *Bostryx*).

TYPE SPECIES — *Bulimus erythrostoma* Sowerby, 1833; OD.

Shell subglobose, rather solid, glossy, of 5-7 moderately convex whorls. Color white to yellow, uniform or with dark irregular radial streaks, sometimes with brown bands. Embryonic whorls smooth, later whorls without regular sculpture, sometimes with vague spiral striae. Aperture large, subcircular, a little oblique, with simple or slightly reflexed, somewhat thickened margins; columellar margin more or less dilated. Umbilicus narrowly open. Height 10-35, diam. 7-25 mm (21.0 × 15.0 mm).

DISTRIBUTION. Chile, Peru, Bolivia, Ecuador, Argentina. About 10 spp.

*Bostryx (Vermetellus) Haas, 1951*  
Fig. 350

Haas, 1951: 520 (*Bostryx* subg.). Breure, 1979: 49 (syn. of *Bostryx*).

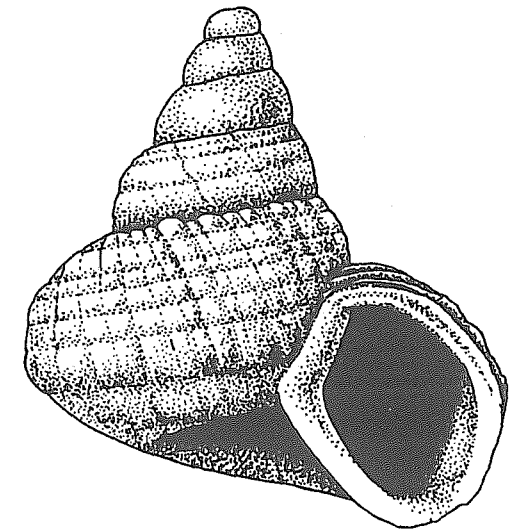


Fig. 350. *Bostryx (Vermetellus) metagyra* Pilsbry et Olsson, 1949.  
Lima, Peru. Chicago No. 30919.

TYPE SPECIES — *Bostryx metagyra* Pilsbry et Olsson, 1949; monotypy.

Shell shortly conic, rather solid, of 6 moderately convex whorls. Color corneous. Embryonic whorls smooth, subsequent whorls nearly so, body whorl with conspicuous sculpture of coarse, irregular, rounded, radial ribs crossed by wide spiral cords; base almost smooth. Aperture irregularly rounded, nearly uninterrupted because of intensive development of parietal callus, subvertical; margins simple. Umbilicus subcylindrical, comparatively broad. Height 8-9, diam. 7-8 mm (8.8 × 8.0 mm).

DISTRIBUTION. Peru. 1 sp.

*Bostryx (Bostryx) s. str.*  
Fig. 351

— *Peronaeus* Albers, 1850: 163 (*Bulimus* subg.; t.-sp. *Bulimus pupiformis* Broderip, 1832; SD Martens in Albers, 1860).

— *Ataxus* Albers, 1850: 164 (*Bulimus* subg.; t.-sp. *Bulimus umbilicaris* Souleyet, 1842; monotypy).



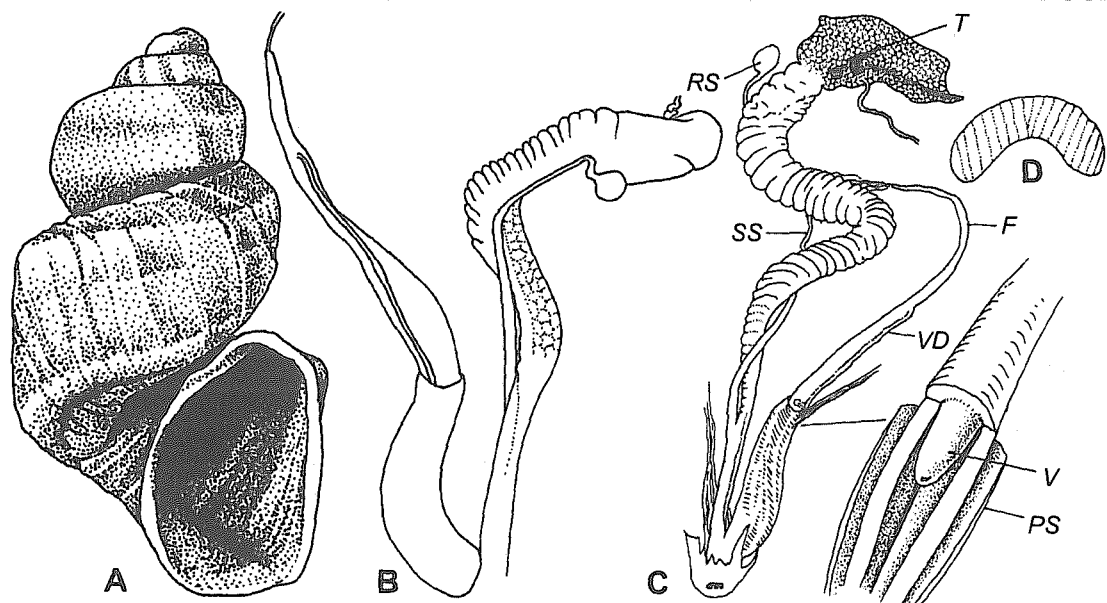


Fig. 351. A, B — *Bostryx (Bostryx) solutus* (Troschel, 1847).

A — shell: 90 km NE of Lima on highway to Oroya, right side of Rio Qimac, El Infiernillo, Peru. Phil. No. 204470. B — reproductive tract. After Breure, 1978.

C, D — ! *Bostryx (Bostryx) ignobilis* (Philippi, 1867). C — reproductive tract and interior of penis. D — jaw. Env. of Tarma, Dept. Junin, Peru, March 6, 1975. Moscow No. Lc-23340 (Leiden).

— *Elatibostrix* Weyrauch, 1958: 112 [*Bostryx* subg.; t.-sp. *Bostryx (Elatibostrix) imeldae* Weyrauch, 1958; OD].

Breure, 1979: 46.

Shell elongated, often partly scalariform, rather solid, of 4.5-11 convex whorls; body whorl often with flat periphery. Color white, sometimes with dark band or irregular streaks. Embryonic whorls smooth or with vague radial wrinklets. Later whorls with irregular radial wrinkles and more or less coarse malleation. Aperture free or nearly so, irregularly ovate, subvertical, with flat palatal wall; margins scarcely thickened, not reflexed. Umbilicus, a round perforation. Height 8-20, diam. 4.2-8.5 mm (8.0 × 4.4 mm).

Hermaphroditic duct only slightly or not convoluted. Talon pigmented, finger-shaped. Vas deferens tightly adherent to free oviduct, vagina and penis, passes under penis sheath. Flagellum medium to rather long. Penial retractor arising on thin membrane coating spermoviduct (!) and attaching to flagellum apically. Penial sheath occupies about half of penis length. Inter-

nally penis with 4 strong rounded pilasters and conic verge. Free oviduct very short, vagina rather long. Spermathecal stalk slender, (sub)cylindrical, reservoir globose, small.

DISTRIBUTION. Peru, Chile. Over 220 spp.

*Bostryx (Platybostryx)* Pilsbry, 1896

Fig. 352

Pilsbry, 1896 (1895-1896): 129 [*Bulimulus (Bostryx)*, sect.].

— *Pampasinus* Weyrauch, 1958: 113 (*Bostryx* subg.; t.-sp. *Bostryx weyrauchi* Pilsbry, 1944; OD).

TYPE SPECIES — *Bulimulus eremothauma* Pilsbry, 1896; monotypy.

Shell flattened-conic, with protruded apex, thin to rather solid, of 4-5 moderately convex to flat whorls, with 2 keels: peripheral and basal. Color white or pinkish, uniform or with dark bands. Embryonic whorls smooth, later with more or less coarse radial striation, sometimes with smoothed broad ribs and variously devel-

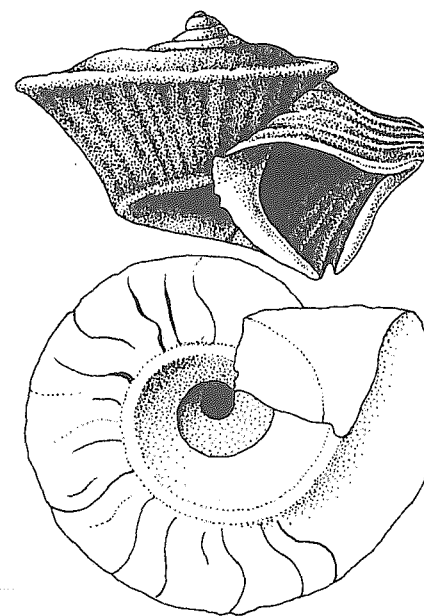


Fig. 352. *Bostryx (Platybostryx) eremothauma* (Pilsbry, 1896). Chile. Holotype. Phil. No. 1480.

oped spiral sculpture. Aperture angled, oblique, with simple margins. Umbilicus rather broad. Height 9-30, diam. 12-32 mm (9.5 × 14.0 mm).

DISTRIBUTION. Chile, Peru. 3 spp.

*Bostryx (Discobostrix)*

Pilsbry et Olsson, 1949

Fig. 353

Pilsbry & Olsson, 1949: 11 (*Bostryx* subg.)

TYPE SPECIES — *Bostryx (Discobostrix) planissimus* Pilsbry et Olsson, 1949; monotypy.

Shell flat, discoidal, solid, with protruded apex, of 5 flat whorls. Body whorl with 2 keels: upper and lower; periphery between them flat. Color white, apex brown. Embryonic whorls smooth, postembryonic with rough irregular radial striation and widely spaced spiral lines. Aperture of irregular shape, with 2 angles, oblique, its margins simple. Umbilicus very broad, quite perspective. Height 4.0, diam. 18.7 mm.

DISTRIBUTION. ? Peru. 1 sp.

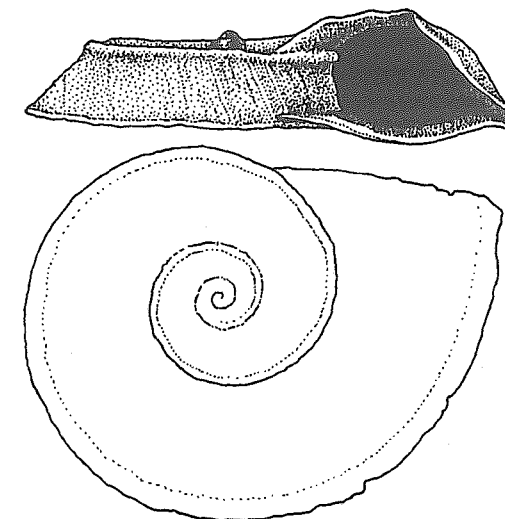


Fig. 353. *Bostryx (Discobostrix) planissimus* Pilsbry et Olsson, 1949. "Purchased with miscellaneous shells in Miraflores" [district of Lima — A. Sch.]. Holotype. Phil. No. 184269.

*Bulimulus* Leach, 1814

Fig. 354

Leach, 1814: 41.

— *Siphalomphix* Rafinesque-Schmaltz, 1833: 165 (t.-sp. *Siphalomphix bonariensis* Rafinesque, 1833; monotypy).

— *Leptomerus* Albers, 1850: 166 (*Bulimus* subg.; t.-sp. "*Bulimulus limnaeoides* Fér." = *Helix limnaeoides* Férussac, 1832; SD Martens in Albers, 1860).

— *Loboa* Ihering, 1917: 121 (t.-sp. *Loboa brunoi* Ihering, 1917; monotypy).

Breure, 1979: 60.

TYPE SPECIES — *Helix exilis* Gmelin, 1791 (= *Bulimus guadalupensis* Bruguière, 1789); OD.

Shell ovate to oblong, moderately thin, of 6-7 slightly to moderately convex whorls. Color chestnut to yellowish, uniform or with darker (brown or reddish) bands. Embryonic whorls with wavy, distinct, radial wrinkles, sometimes with granulation or pit-reticulate on their lower part. Sculpture of postembryonic surface of

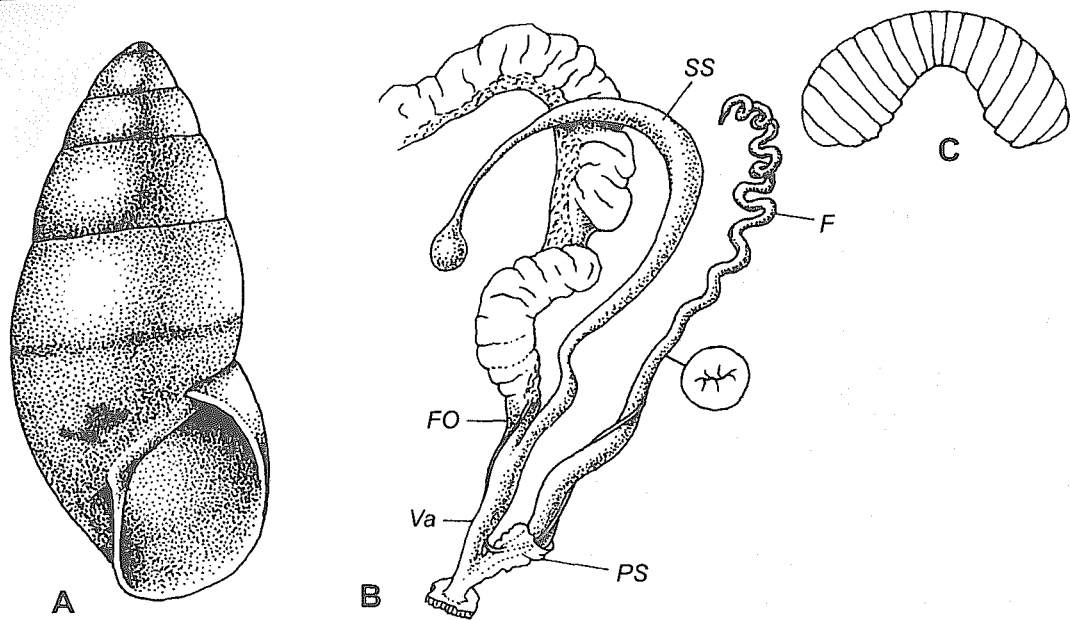


Fig. 354. *Bulimulus guadalupensis* (Bruguière, 1789). Willemstad, Curaçao. December, 1974. A — shell. B — reproductive tract. C — jaw. Moscow No. Lc-19571 (Leiden).

fine irregular radial striae and finer spiral grooves. Aperture ovate to squarish-ovate, with simple unexpanded or nearly so margins. Umbilicus, a narrow dot or slit. Height 9-35, diam. 4.5-13.5 mm (16.0 × 7.7 mm).

Jaw of many moderately narrow, only slightly converging, overlapping plates; median triangular area absent or indistinct.

Kidney triangular, more or less narrow. Secondary ureter closed throughout. Main pulmonary vein prominent and broad. Side veins well developed.

Flagellum slender, penial retractor attached to its end. Penis more or less swollen, its lumen divided into several parallel chambers. Penial verge well developed. Vagina relatively short. Spermathecal stalk enlarged at middle portion, reservoir globose.

DISTRIBUTION. Antilles, Venezuela, Guyana, Surinam, French Guyana, Brazil, Paraguay, Uruguay, Argentina, Bolivia, Peru, Colombia, Central America, Mexico. Over 100 spp. & subspp.

#### *Naesiotus* Albers, 1850

Albers, 1850: 162 (*Bulimus* subg.).

— *Rhaphiellus* L. Pfeiffer, 1856: 160 (*Bulimus*

subg.; t.-sp. *Bulimus achatellinus* Forbes, 1850; OD).

— *Nesiotus* Martens in Albers, 1860: 220 (nom. err. pro *Naesiotus* Albers, 1850; t.-sp. *Bulinus nux* Broderip, 1832; OD).

— *Nesiotus* L. Pfeiffer, 1881 (1878-1881): 254 (nom. err. pro *Nesiotus* Martens in Albers, 1860).

Breure, 1979: 64.

TYPE SPECIES — *Bulinus nux* Broderip, 1832; SD Dall, 1896.

Shell turritid to elongated-ovate, of 6-9 flattened to moderately convex whorls. Color whitish to brownish, uniform or with darker bands or radial streaks. Embryonic sculpture of wavy or straight radial riblets and crowded fine spiral lines. Postnuclear whorls variously sculptured; generally with radial, more or less regular striation, sometimes with malleation or coarse wrinkles or nearly smooth. Aperture ovate to elongated-ovate, with thin or rather thickened margins, which are simple to hardly expanded; parietal and columellar teeth sometimes present. Umbilicus, a narrow dot or slit, sometimes closed.

Kidney triangular, narrowed. Secondary ureter completely closed. Main pulmonary vein moderately developed, strongest at an-

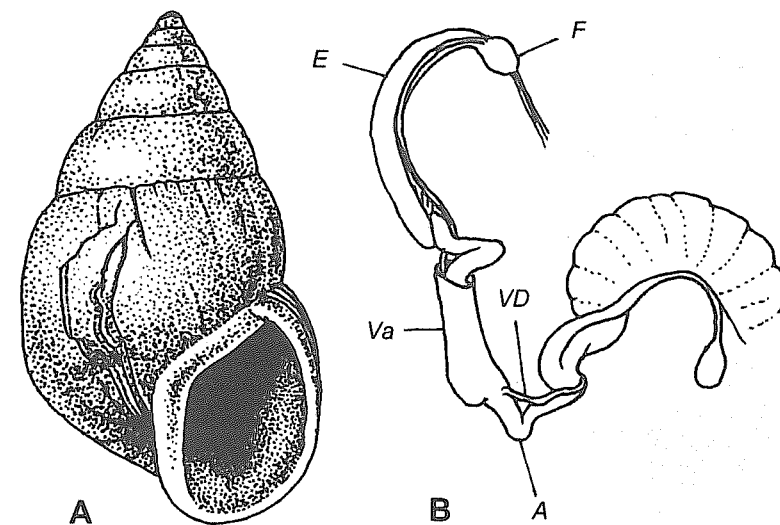


Fig. 355. *Naesiotus (Naesiotus) nux* (Broderip, 1832).

A — shell: Santa Maria (= Charles) Island, Galapagos. Leiden. B — reproductive tract. After Pilsbry, 1946a.

terior end; side veins poorly to moderately developed.

Flagellum subcylindrical or divided into stout and slender parts. Penis (sub)cylindrical, sometimes with median swelling, internally with rather short verge; lumen of penis divided into several parallel chambers or sac-like cavities and lined by two types of epithelium. Penis sheath present. Spermathecal duct subcylindrical, reservoir globose.

DISTRIBUTION. Lesser Antilles; Venezuela, Brazil, Paraguay, Uruguay, Argentina, Bolivia, Peru, Ecuador, Colombia; Galapagos. About 150 spp. & subspp. [in Galapagos — 63 spp.]

REMARK. The situation with subgeneric division is same as in *Bostryx*, according to Breure (1979).

#### *Naesiotus (Naesiotus) s. str.*

Fig. 355

— *Saeronia* Dall, 1920: 120 [*Bulimulus (Naesiotus)* sect.; t.-sp. *Bulimulus (Naesiotus) simrothi* Reibisch, 1892; OD].

— *Obstrusus* Parodiz, 1946: 354 (t.-sp. *Helix rocyanana* d'Orbigny, 1835; OD).

Shell pointed-ovate, rather solid to thin,

of 6-7 moderately convex whorls. Color brown, often with indistinct darker and lighter bands and radial streaks. Embryonic whorls delicately radially costulate. Postembryonic whorls with rough radial wrinkles and distinct, deep, wavy, not crowded spiral grooves. Aperture irregularly ovate, subvertical, with thin or slightly thickened, simple margins. Columellar margin dilated, sometimes with light knob. Umbilicus narrowly open. Height 18-24, diam. 9-13 mm (20.0 × 11.0 mm).

Vas deferens piercing penis sheath, then passing under it, and fastened to epiphallus. Flagellum short, subglobose. Epiphallus rather long, more or less convoluted. Penial retractor attached terminally to flagellum. Spermathecal shaft not long, a little expanded basally. Reservoir small.

DISTRIBUTION. Argentina, Galapagos Islands. 7-8 spp. with several forms.

#### *Naesiotus (Ochsneria) Dall, 1920*

Fig. 356

Dall, 1920: 121 [*Bulimulus (Naesiotus)* sect.]. Breure, 1979: 65 (as syn. of *Naesiotus s. str.*).

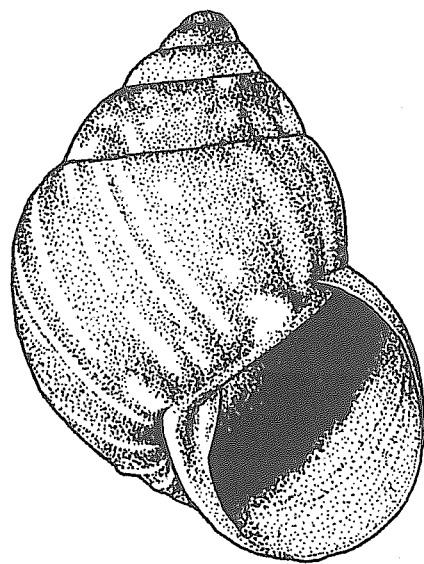


Fig. 356. ! *Naesiotus (Ochsneria) ochsneri* (Dall, 1920). Indefatigable Island, Galapagos. Chicago No. 13791.

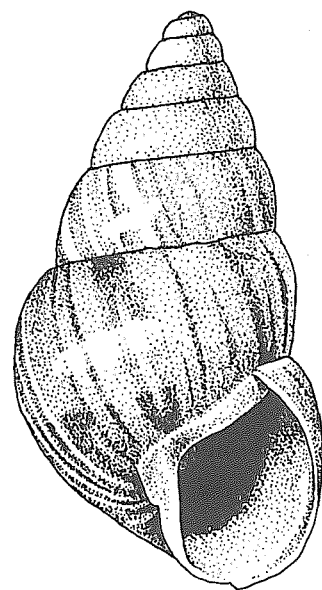


Fig. 357. *Naesiotus (Nuciscus) ustulatus* (Sowerby, 1833). Galapagos. Syntype. Phil. No. 25678.

TYPE SPECIES — *Bulimulus (Naesiotus) wolffi* Reibisch, 1892; OD.

Shell ovate-globose, moderately solid, dull, of 5-6 slightly convex whorls. Last whorl evenly rounded at periphery. Color brown or chestnut, with yellow, irregular, radial streaks and spots. Aperture of same color inside. Embryonic whorls with microscopic, radial, wavy riblets. Postnuclear whorls with weak irregular radial wrinklets and thin but distinct spiral threadlets. Aperture rounded, toothless or with 1-3 variously developed tuberculiform teeth: parietal, columellar and palatal. Umbilicus dot-like. Height 11-15, diam. 7-11 mm (15.0 × 10.2 mm).

DISTRIBUTION. Galapagos Islands. 8 spp.

*Naesiotus (Nuciscus) Dall, 1920*  
Fig. 357

Dall, 1920: 119 [*Bulimulus (Naesiotus) sect.*].  
Breure, 1979: 65 (as syn. of *Naesiotus s. str.*).

TYPE SPECIES — *Bulinus ustulatus* Sowerby, 1833; OD.

Shell high-conic, rather thin but firm, glossy, of 6-7 moderately convex whorls.

Color whitish to corneous, usually with irregular darker streaks. Embryonic sculpture of fine radial riblets. Early postnuclear whorls with well spaced spiral threadlets, 2 last whorls with rough radial striation. Aperture ovate, a little oblique, with thin, simple margins. Columellar margin dilated. Umbilicus, a broad perforation. Height 8-14, diam. 3.8-7.3 mm (13.6 × 7.0 mm).

DISTRIBUTION. Galapagos Islands. About 10 spp.

*Naesiotus (Reclasta) Dall, 1920*  
Fig. 358

Dall, 1920: 119 [*Bulimulus (Naesiotus) sect.*; t.-sp. *Bulinus unifasciatus* Sowerby, 1833; OD].

— *Olinodia* Dall, 1920: 120 [*Bulimulus (Naesiotus) sect.*; t.-sp. *Bulimulus (Naesiotus) amastroides* Ancey, 1887; OD].

Breure, 1979: 65 (as syn. of *Naesiotus s. str.*).

Shell ovate-conic, moderately solid, dull, of 6-7 moderately convex whorls. Color brownish or yellowish-olive, often with light peripheral band; sometimes another band or zone around umbilicus present. Embryonic whorls smooth or nearly

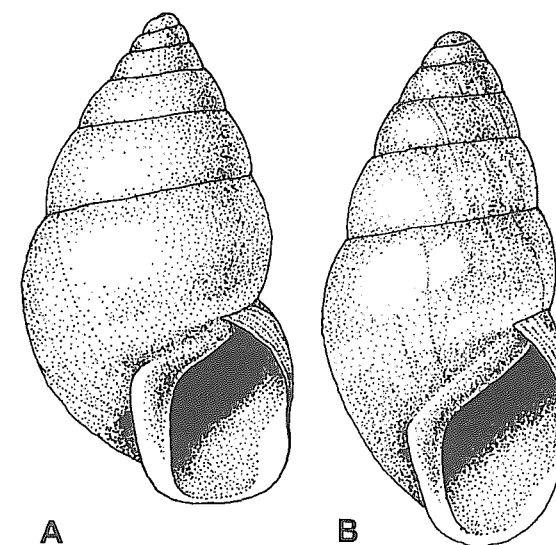


Fig. 358. A — ! *Naesiotus (Reclasta) olla* (Dall, 1893). Duncan Island, Galapagos. Chicago No. 72739.  
B — ! *Naesiotus (Reclasta) amastroides* (Ancey, 1887). Galapagos Islands. Phil. No. 3501.

so. Later whorls with coarse irregular radial wrinkles and widely spaced spiral lines. Aperture more or less ovate or irregularly quadrangular, slightly oblique, with simple margins. Columellar margin widely dilated. Umbilicus dot-like to narrowly open. Height 10-23, diam. 4.5-13.0 (*olla*: 15.5 × 8.0 mm; *amastroides*: 11.0 × 5.0 mm).

DISTRIBUTION. Galapagos Islands. 5-6 spp.

*Naesiotus (Adenodia) Dall, 1920*  
Fig. 359

Dall, 1920: 119 [*Bulimulus (Naesiotus) sect.*].  
Breure, 1979: 65 (as syn. of *Naesiotus s. str.*).

TYPE SPECIES — *Bulinus eschariferus* Sowerby, 1833; OD.

Shell slender, high-conic to subcylindrical, translucent, thin, of 7-8 slightly convex whorls. Color corneous, uniform or with diffuse whitish band just under periphery. Embryonic whorls smooth or with very fine radial wrinklets, later whorls with very delicate radial and variously developed spiral punctated striae (look like smooth). Aperture irregularly ovate, slightly oblique; margins simple except expanded columellar; swelling on columellar margin sometimes present. Um-

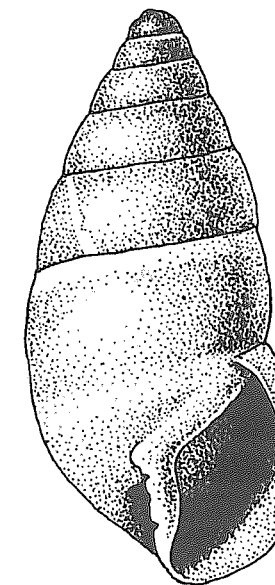


Fig. 359. *Naesiotus (Adenodia) eschariferus* (Sowerby, 1833). Wreck Island, Galapagos. Chicago No. 50882.



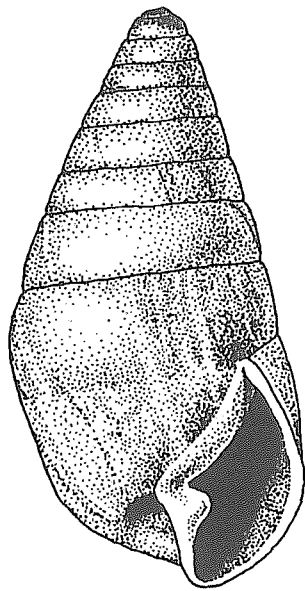


Fig. 360. *Naesiotus (Pelecostoma) canaliferus* (Reibisch, 1893).  
Chatham Id., Galapagos. Chicago No. 72756.

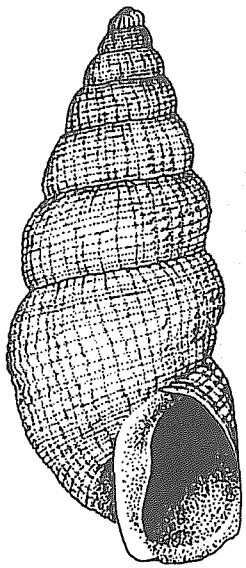


Fig. 361. *Naesiotus (Granucis) planospira* (Ancey, 1887).  
Charles Island, Galapagos. Phil. No. 180238.

bilicus in form of broad slit. Height 12-18, diam. 5-8 mm (12.2 × 5.1 mm).

DISTRIBUTION. Galapagos Islands. 4-5 spp.

*Naesiotus (Pelecostoma) Reibisch, 1893*  
Fig. 360

Reibisch, 1893: 25 [*Bulimulus* sect.]. Breure, 1979: 65 (as syn. of *Naesiotus* s. str.).

TYPE SPECIES — *Bulimulus (Pelecostoma) canaliferus* Reibisch, 1893; OD.

Shell high-conic, moderately thin, glossy, of 8.5-9 narrow, flattened whorls. Last whorl with compressed sides. Color corneous, sometimes with diffuse whitish band. Embryonic whorls smooth and shining, later nearly so, without regular sculpture. Aperture rather narrow, of irregular shape, pointed above and below, markedly oblique, with slightly thickened, not reflexed margins. Columellar margin with large tuberculiform lamella and corresponding deep depression. Umbilicus cylindrical, comparatively broad. Height 8-10, diam. 4-5 mm (9.7 × 4.8 mm).

DISTRIBUTION. Chatham Island, Galapagos. 1 sp.

REMARK. In the original description, Reibisch (1893) included 2 species in this genus. The second species belongs to *Tornatellina* (Achatinellidae) (Dall, 1920).

*Naesiotus (Granucis) Dall, 1920*  
Fig. 361

Dall, 1920: 118 [*Bulimulus (Naesiotus)* sect.]. Breure, 1979: 65 (as syn. of *Naesiotus* s. str.).

TYPE SPECIES — *Bulimulus rugulosus planospira* Ancey, 1887; OD.

Shell elongated-ovate, solid, of 7-8 quite convex, sometimes shouldered whorls. Last whorl with shallow, variously developed peripheral depression. Color whitish to dark corneous. Embryonic whorls with fine, distinct, radial riblets. Sculpture of later whorls of coarse radial and spiral threads forming sort of network. Aperture irregularly quadrangular, a little oblique, with scarcely reflexed margins. Columellar margin expanded, sometimes with light thickening in middle. Umbilicus, rather wide perforation. Height 18-24, diam. 7-9 mm (22.3 × 8.7 mm).

DISTRIBUTION. Galapagos Islands (Charles, ?Hood Islands). 4 spp.

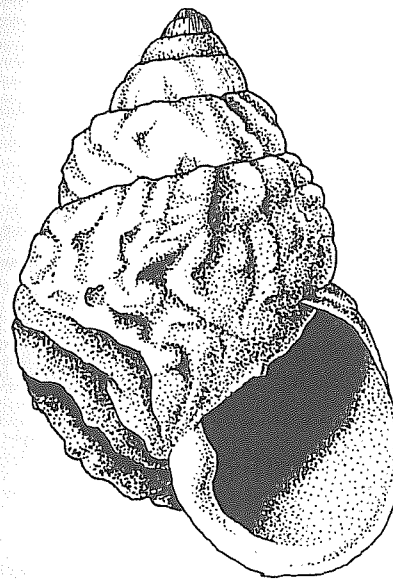


Fig. 362. ! *Naesiotus (Granitza) darwini* (Pfeiffer, 1846).  
James Island, Galapagos. Chicago No. 72750.



Fig. 363. *Naesiotus (Granella) sculpturatus* (L. Pfeiffer, 1846).  
James Island, Galapagos. Chicago No. 72752.

*Naesiotus (Granitza) Dall, 1920*  
Fig. 362

Dall, 1920: 121 [*Bulimulus (Naesiotus)* sect.]. Breure, 1979: 65 (as syn. of *Naesiotus* s. str.).

TYPE SPECIES — *Bulimulus (Naesiotus) duncanus* Dall, 1893; OD.

Shell pointed-ovate, rather thin to quite solid, white to light-corneous, of 6-7 convex whorls. Embryonic whorls nearly smooth or with microscopic radial riblets. Later whorls with more or less developed, sometimes very rough, malleation; traces of spiral striae sometimes present in some depressions. Aperture rounded, somewhat oblique, with simple margins. Parietal wall with vestigial tooth; variously developed swelling on columellar margin may be present. Umbilicus dot-like. Height 16-18, diam. 10-12 mm (16.3 × 10.1 mm).

DISTRIBUTION. Galapagos Islands (James, Jervis, Duncan Islands). 3 spp.

*Naesiotus (Granella) Dall, 1920*  
Fig. 363

Dall, 1920: 121 [*Bulimulus (Naesiotus)* sect.]. Breure, 1979: 65 (as syn. of *Naesiotus* s. str.).

TYPE SPECIES — *Bulimus sculpturatus* L. Pfeiffer, 1846; OD.

Shell high-conic, rather thin, of 6-9 convex whorls. Color grey to light-corneous. Embryonic sculpture of distinct, well spaced, radial riblets and microscopic spiral striae in interspaces. Later whorls with very coarse malleation and spiral threadlets. Aperture ovate, toothless, somewhat oblique, with simple margins; columellar margin more or less expanded. Umbilicus minute. Height 10.5-18.0, diam. 5-8 mm (13.5 × 7.0 mm).

DISTRIBUTION. Galapagos Islands (Indefatigable, Jervis, James). 6 spp.

*Naesiotus (Stemmodiscus) Dall, 1920*  
Fig. 364

Dall, 1920: 120 [*Bulimulus (Naesiotus)* sect.]. Breure, 1979: 65 (as syn. of *Naesiotus* s. str.).

TYPE SPECIES — *Bulimulus snodgrassi* Dall, 1900; OD.

Shell slender, high, elongated-ovate, moderately thin, shining, slightly translucent, of about 8 slightly convex whorls. Color corneous, with 3 brown bands. Embryonic sculpture of fine, regular, radial, not crowded riblets. Subsequent whorls with irregular radial wrinklets and shallow, widely spaced spi-

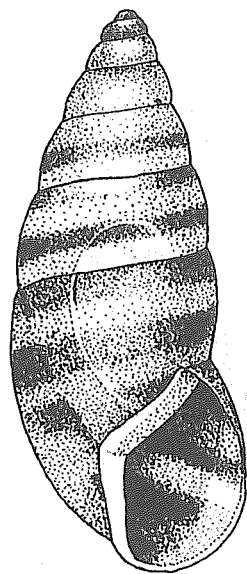


Fig. 364. *Naesiotus (Stemmodiscus) snodgrassi* (Dall, 1900).  
1 mile inland from Long White Beach, Gardner Bay, Hood Island, Galapagos. Moscow No. Lc-23338 (Phil.).

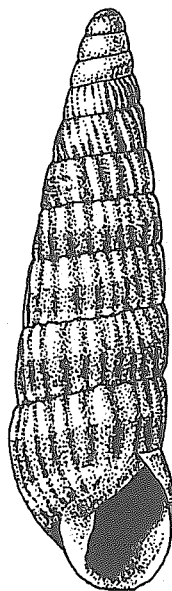


Fig. 365. *Naesiotus (Pleuropyrgus) chemnitzoides* (Forbes, 1850).  
Chatham Island, Galapagos. Phil. No. 97626.



Fig. 366. ! *Naesiotus (Maranhoniellus) fernandezae* Weyrauch, 1958.  
Marañon River, near Balsas, N Peru. Paratype. Phil. No. 290048.

ral lines. Aperture ovate, subvertical, with simple margins; columellar margin moderately reflexed. Umbilicus dot-like. Height 15-18, diam. 6-7 mm (17.5 x 6.8 mm).

DISTRIBUTION. Galapagos Islands (Hood, Gardner, Charles, Barrington Islands). 3 spp.

*Naesiotus (Pleuropyrgus) Martens, 1860*  
Fig. 365

Martens in Albers, 1860: 221 (*Bulimulus* subg.).  
Breure, 1979: 65 (as syn. of *Naesiotus* s. str.).

TYPE SPECIES — *Bulimus chemnitzoides* Forbes, 1850; monotypy.

Shell slender, turreted, rather thin, of 9-10 flattened to moderately convex whorls. Color corneous, with 1-3 chestnut bands. Embryonic whorls smooth, later with heavy, wide, rounded, radial ribs and traces of spiral striae. Aperture rounded or shortly ovate, small, with simple margins; columellar margin strongly dilated. Umbilicus, a minute perforation. Height 12-19, diam. 3.5-5.0 mm (13.0 x 3.6 mm).

DISTRIBUTION. Galapagos Islands (Indefatigable, Chatham, James Islands). 4-5 spp.

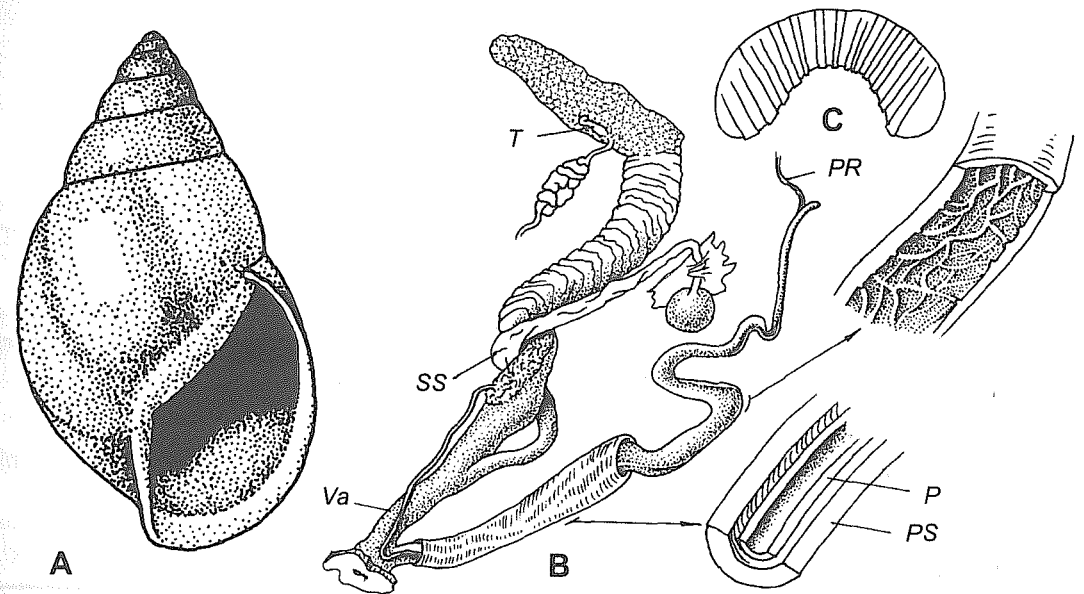


Fig. 367. *Rabdotos (Rabdotos) dealbatus* (Say, 1821).  
Austin, Texas, July 1982. A — shell. B — reproductive tract and interior of penis and epiphallus. C — jaw. Moscow No. Lc-23958.

*Naesiotus (Maranhoniellus)*  
Weyrauch, 1958)  
Fig. 366

Weyrauch, 1958: 122. Breure, 1979: 65 (as syn. of *Naesiotus* s. str.).

TYPE SPECIES — *Naesiotus pilsbryi* Weyrauch, 1956; OD.

Shell slender, cylindrical, moderately solid, of 8-12 convex whorls. Lower half of body whorl flattened peripherally. Color whitish, apex pinkish to reddish. Embryonic whorls with delicate radial riblets. Postapical sculpture of rounded, more or less regular, radial ribs and a few variously developed, widely spaced spiral lines. Aperture small, ovate-quadrangular, somewhat oblique, with simple margins. Umbilicus minute, slit-like. Height 13-20, diam. 2.5-3.5 mm (14.3 x 3.0 mm).

DISTRIBUTION. Peru. 2 spp.

*Rabdotos* Albers, 1850

Albers, 1850: 164 (*Bulimus* subg.).

— *Rhabdotos* Martens in Albers, 1860: 218 (nom. err. pro *Rabdotos* Albers, 1850).

— *Orthotomium* Crosse et Fischer in Fischer & Crosse, 1875 (1870-1902): 473 (*Bulimulus* "groupe"; t.-sp. *Bulimus sufflatus* Gould in Binney, 1859; OD).

— *Globulinus* Crosse et Fischer in Fischer & Crosse, 1875 (1870-1902): 475 (*Bulimulus* subsect.; t.-sp. *Bulimus sufflatus* Gould in Binney, 1859; OD).

— *Hannarabdotos* Emerson et Jacobson, 1964: 325 (*Rabdotos* subg.; t.-sp. *Bulimus slevini* Hanna, 1923; OD).

Breure, 1979: 72.

TYPE SPECIES — *Helix dealbata* Say, 1821; SD Kobelt, 1880.

Shell elongated-ovate to elongated-globose or turreted, thin to rather solid, of 6-12 flattened to moderately convex whorls. Color uniformly whitish to yellowish or with variously developed dark radial streaks. Embryonic whorls sculptured with distinct radial riblets; postembryonic surface nearly smooth. Aperture more or less ovate, with thin, simple to expanded and usually somewhat reflexed; columellar margin simple or bearing oblique lamella. Umbilicus, a minute perforation.

Kidney narrow, triangular; secondary ureter closed. Main pulmonary vein promi-

ment, side vessels strongly developed, especially at anterior end.

Talon short, tubular, not hidden. Flagellum slender, penial retractor attached to it apically. Epiphallus relatively long. Penis swollen above upper edge of sheath. Lumen of penis divided into distal (broad, with pouches) and proximal (narrow) parts. Spermathecal shaft slender, subcylindrical; reservoir globose.

DISTRIBUTION. Mexico, southern United States.

REMARK. The situation with subgeneric division is same as in *Bostryx*, according to Breure (1979).

*Rabdotus (Rabdotus s. str.)*  
Fig. 367

Shell ovate-globose to subcylindrical or pillar-shaped, moderately thin to rather solid, opaque. Color uniformly white or with dark radial streaks and spots, never with spiral color markings; apex usually black or dark-brown. Embryonic whorls with delicate radial riblets, interspaces often minutely striated spirally. Postnuclear sculpture of smoothed, irregular wrinkles. Aperture ovate, often with white lip within; margins simple or a little reflexed. Umbilicus narrow, subcircular or slit-like. Height 15-33, diam. 8.5-20.5 mm (18.2 × 11.3 mm).

DISTRIBUTION. N Mexico incl. Lower California, south of U.S.A from Texas north to Missouri and Kentucky, east to Alabama. About 20 spp., subspp. & forms.

*Rabdotus (Puritanina) jacobsoni* (Jacobson, 1958)  
Fig. 368

Jacobson, 1958: 7 (pro gen.).

TYPE SPECIES — *Bulimulus (Scutalus) montezuma* Dall, 1893; OD.

Shell acuminate-ovate, moderately solid, dull, of about 6 slightly convex whorls. Color whitish. Embryonic whorls with more or less smoothed radial riblets. Later whorls with very distinct tuberculate sculpture. Aperture ample, irregularly ovate, with broadly reflexed and expanded margins. Columellar margin dilated, with low subvertical lamella. Umbilicus comparatively broad. Height 37-63, diam. 20-36 mm (47.0 × 27.2 mm).

DISTRIBUTION. W Mexico incl. Lower California. 2 spp.

*Rabdotus (Leptobyrus)*  
Crosse et Fischer, 1875  
Fig. 369

Crosse & Fischer in Fischer & Crosse, 1875 (1870-1902): 475 (*Bulimulus* subsect.).

— *Sonorina* Pilsbry, 1896: 114 (nom. emend. pro *Leptobyrus* Crosse et Fischer, 1875; non *Leptobyrus* Stål, 1873).

Breure, 1979: 73 (as syn. of *Rabdotus s. str.*).

TYPE SPECIES — *Bulimulus spirifer* Gabb, 1868; OD.

Shell ovate-fusiform, moderately thin, of about 6 moderately convex whorls. Color corneous to whitish, sometimes with weak, diffused, irregular, radial streaks. Embryonic whorls flat, with fine smoothed riblets. Later whorls without regular radial sculpture; body whorl with very delicate spiral striae. Aperture ovate, subvertical, with widely reflexed margins. Columella with more or less developed lamella within last whorls. Umbilicus, a minute slit on bottom of deep umbilical depression. Height 24-47, diam. 10-24 mm (35.0 × 15.1 mm).

DISTRIBUTION. Lower California. 2 or 3 spp.

*Rabdotus (Plicolumna) cooperi* (Cooper, 1895)  
Fig. 370

Cooper, 1895: 164 (nom. nov. pro *Columna* Cooper, 1892).

— *Columna* Cooper, 1892: 215 (nom. praeocc., non Perry, 1811; t.-sp. *Rhodea californica ramentosa* Cooper, 1891; monotypy).

— *Pseudorhodea* Dall, 1895: 51 (t.-sp. *Rhodea californica ramentosa* Cooper, 1891; OD).

Breure, 1979: 73 (as syn. of *Rabdotus s. str.*).

TYPE SPECIES — *Rhodea californica ramentosa* Cooper, 1891; OD.

Shell slender, cylindrical or turreted, moderately solid to thin, of 7-12 flattened to rather convex whorls. Last whorl often with spiral depression on periphery. Color dull-whitish to light-corneous. Embryonic sculpture of regular radial riblets, early postnuclear whorls with tubercles arranged in spiral rows, 2 or 1 last whorl with periostracal spiral threadlets; sometimes sur-

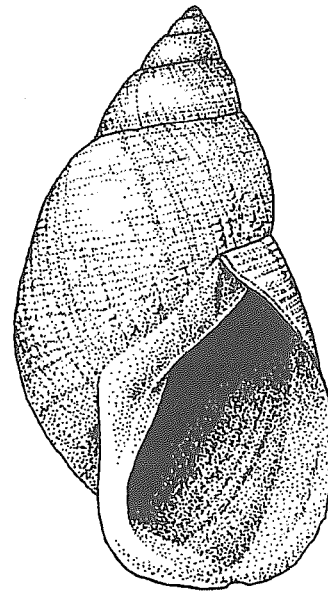


Fig. 368. *Rabdotus (Puritanina) montezuma* (Dall, 1893).  
Lower California, Phil. No. 68733.

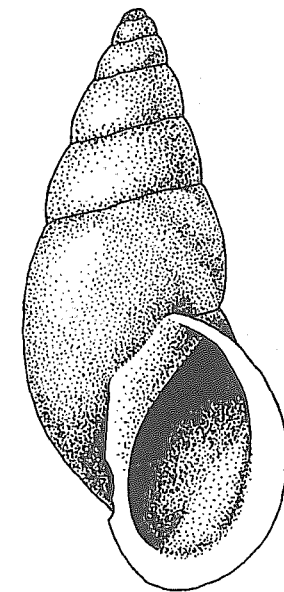


Fig. 369. *Rabdotus (Leptobyrus) spirifer* (Gabb, 1868).  
Lower California. Holotype. Phil. No. 25718.

face of shell densely covered with hairs. Aperture small, rounded, slightly oblique, with shortly reflexed margins. Columellar margin sometimes with weak spiral lamella. Umbilicus very narrow. Height 17-23, diam. 3.5-6.8 mm (22.0 × 4.1 mm).

DISTRIBUTION. Lower California. 5 spp.

? *Berendtia* Crosse et Fischer, 1869  
Fig. 371

Crosse & Fischer, 1869: 191. Christensen & Miller, 1975: 44.

TYPE SPECIES — *Clausilia (Balea?) taylori* L. Pfeiffer, 1861; OD.

Shell slender, turreted, straightly tapering, of about 11 flattened whorls. Color corneous. Embryonic whorls smooth, later with more or less regular radial light ribs; ribs becoming more widely spaced on two last whorls. Aperture rounded, free, oblique, with expanded and subreflexed margins. Columellar margin with weak oblique lamella. Columella imperforate, slender and weakly sigmoid in each whorl. Umbilicus, a narrow rim. Height 45-50, diam. 10-12 mm (46.0 × 11.2 mm).

Kidney triangular, narrow. Secondary

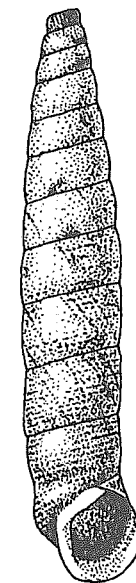


Fig. 370. *Rabdotus (Plicolumna) ramentosa* (Cooper, 1891).  
Lower California. Phil. No. 68741.

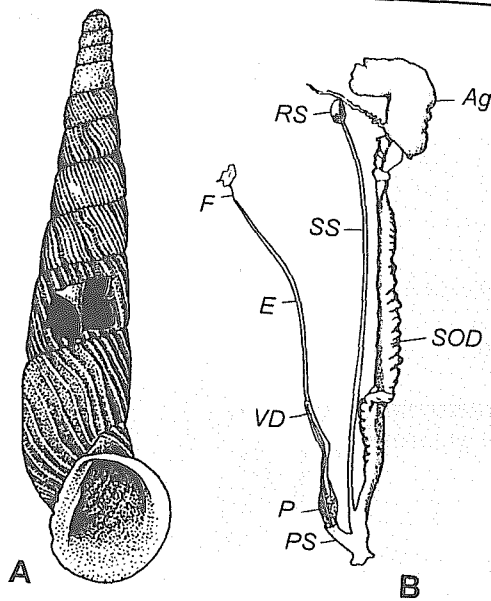


Fig. 371. *Berendtia taylori* (L. Pfeiffer, 1861).  
A — shell: San Javier, Baja California Sur,  
Mexico, October 25, 1974. Leiden. B —  
reproductive tract. After Christensen & Mil-  
ler, 1975.

ureter open at anterior end over 1/5-1/6 of its length. Main pulmonary vein prominent, especially at anterior end, where side veins also strongly developed.

Hermaphroditic duct entering at base of curved albumen gland. Penis with muscular sheath enclosing vas deferens and cylindrical lower portion of penis; penis above sheath swollen, extending partly over lower end of epiphallus. Epiphallus cylindrical, continuous with long slender flagellum, their junction marked by entrance of vas deference. Distal end of flagellum bearing insertion of penial retractor. Vagina short. Spermathecal duct long, slender, simple; reservoir small, globose or ovate.

DISTRIBUTION. Sierra de la Giganta of the central region of Baja California (Mexico). 1 sp.

REMARK. Christensen & Miller (1975: 45) have transferred the genera *Berendtia* and *Spartocentrum* from Urocoptidae to Bulimulidae, mainly based on the fact that externally the reproductive tract of these genera is nearly identical to that of *Rabdodus*: "In all three genera a sheath encloses the vas deferens and lower portion of the penis, the penis above the sheath appears swollen, and the epiphallus is continuous

with a long epiphallic caecum (flagellum — A. Sch.) which bears the penial retractor muscle at its distal end". Indeed, as far as it is known, Urocoptidae have no penis sheath [although flagellum is present in Holospirinae (Urocoptidae)], but anatomy of many urocoptids still unknown. Therefore, I follow Christensen and Miller, though, judging by shell characters of *Berendtia* and, especially, of *Spartocentrum* [structure of columella which is not characteristic for Bulimulidae and somewhat similar to that of *Epirobia* (Urocoptidae, Holospirinae)], I assume that these genera (or, at least, *Spartocentrum*) do belong to Urocoptidae.

? *Spartocentrum* Dall, 1895  
Fig. 372

Dall, 1895: 51.

— *Teneritia* Mabilie, 1897: 97 (t.-sp. *Berendtia digueti* Mabilie, 1897; SD Breure, 1979).

Christensen & Miller, 1975: 45.

TYPE SPECIES — *Cylindrella* (*Urocoptis*) *irregulare* Gabb, 1867; OD.

Shell turritid, slender, cylindrical below, tapering above, of 18-21 convex whorls. Last whorl slightly ascending, with weak basal crest. Color whitish to brown. Embryonic whorls (2.5) bulbous, covered with radial riblets; next 2 whorls decussated, granose, subsequent whorls ribbed, last whorl with no trace of subperipheral cord, adnate or becoming free. Aperture rounded, with thin, reflexed margins. Columella smooth, somewhat sinuous within each whorl, having spiral swelling or convexity covered with numerous blunt tubercles. Umbilicus tiny. Height 19-33, diam. 4.4-6.5 mm (19.1 × 4.8 mm).

Penis with sheath, swollen above its upper ridge. Vagina short. Spermathecal duct slender, subcylindrical; reservoir globose.

DISTRIBUTION. Central and southern parts of Baja California and some islands in the Gulf of California. 10 spp.

REMARK. See remark to *Berendtia*.

*Protoglyptus* Pilsbry, 1897  
Fig. 373

Pilsbry, 1897 (1897-1898): 84 (*Bulimulus* subg.).

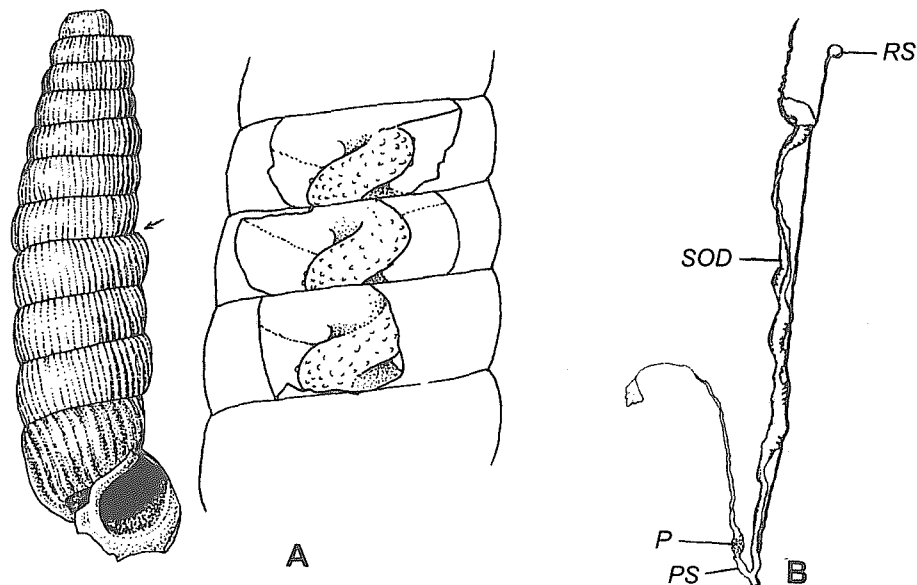


Fig. 372. A — *Spartocentrum irregulare* (Gabb, 1867).

Shell: "Moleje Bass-Californie". Syntype (shell has been broken and repaired at the level indicated by arrow). Paris.

B — ! *Spartocentrum vanduzeei* (Hanna, 1923). Reproductive tract. After Christensen & Miller, 1975.

— *Rimatula* Parodiz, 1946: 353 (t.-sp. *Protoglyptus deletangi* Parodiz, 1946; OD).

Breure, 1979: 65 (as syn. of *Naesiotus* Albers, 1859).

TYPE SPECIES — *Buliminus pilosus* Guppy, 1871; SD Parodiz, 1946.

Shell acuminate-ovate, moderately thin, shining, of 5-5.5 rather convex whorls. Color uniformly brown to chestnut. Embryonic sculpture of distinct radial riblets sometimes crossed by spiral lines. Later whorls with irregular weak radial wrinkles and very short setae arranged in more or less widely spaced spiral rows. Aperture ovate, with thin, shortly reflexed margins. Umbilicus minute. Height 10.5-33.0, diam. 5-14 mm (13.2 × 7.0 mm).

Plaits of jaw broad, not or only slightly converging.

Talon exposed, rod-like, with very short apical vesicles. Vas deferens adherent, penetrating penis sheath. Flagellum long. Epiphallus and penis long. Internally penis with conspicuous glandular tissue. Penis sheath well developed. Free oviduct much longer than vagina. Spermathecal shaft subcylindrical, long, more or less expanded

in middle portion; reservoir globose. Spermatophore long, with longitudinal ridge lacking spines.

DISTRIBUTION. East of S America, Trinidad, West Indies. About 15 spp.

*Scutalus* Albers, 1850

Albers, 1850: 160 (*Bulimus* subg.). Breure, 1979: 79.

TYPE SPECIES — *Bulimus proteus* Broderip in Broderip & Sowerby, 1832; SD Martens in Albers, 1860.

Shell elongated-ovate to globose or helicoid, thin to solid, of 5-6 hardly to slightly convex whorls. Color light-grey to brown, monochromatic or with color pattern of darker spots or bands. Embryonic whorls pit-reticulated or with anastomosing radial riblets; postembryonic whorls with incrassate radial striae or granulation. Aperture subvertical to very oblique, more or less ovate, with simple or expanded margins; columellar margin sometimes bears oblique rounded lamella. Umbilicus, a short slit to rather broad perforation.

DISTRIBUTION. N Argentina, Brazil, Bolivia, Peru, Ecuador.



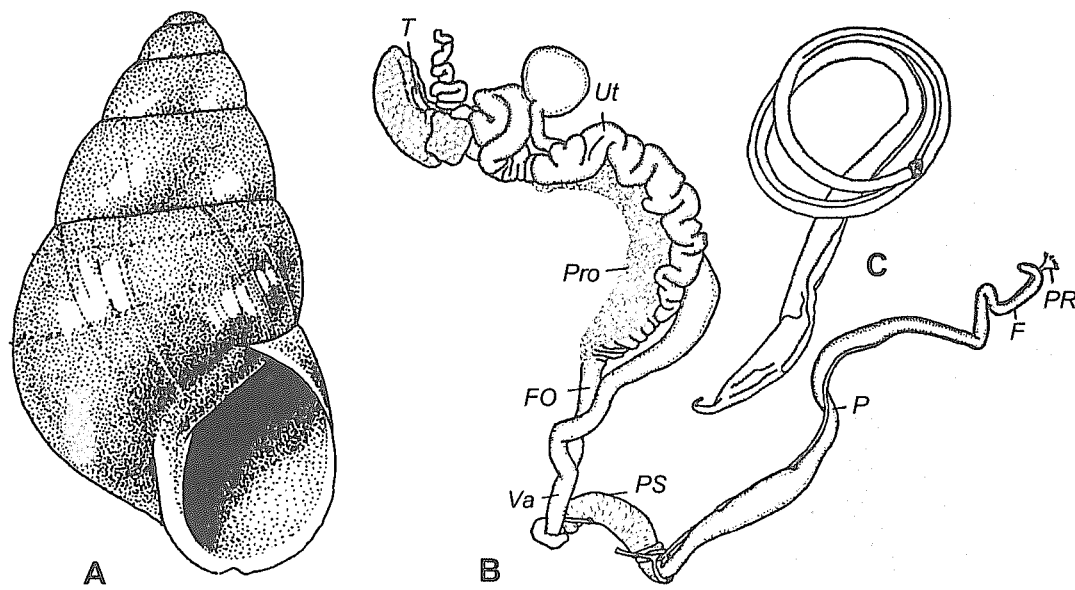


Fig. 373. A — *Protoglyptus pilosus* (Guppy, 1871). Shell: Trinidad. Phil. No. 25666. B, C — ! *Protoglyptus lopesi* Rezende, Lanzieri et Inada, 1972. B — reproductive tract, C — spermatophore. After Rezende et al., 1972.

*Scutalus (Suniellus)* Breure, 1978  
Fig. 374

Breure, 1978: 188.

TYPE SPECIES — *Scutalus (Suniellus) chillu* Breure, 1978; OD.

Shell ovate-conic to globose, thin, slightly shining, of 4-5 moderately convex whorls. Color uniformly yellowish to blackish-brown or (more often) with irregular radial lighter streaks. Embryonic sculpture of radial, sometimes more or less anastomosing wrinkles. Postembryonic whorls covered with irregular radial striae, often broken into oblong granules. Aperture ovate, with thin and simple margins. Columellar margin with small lamella. Umbilicus, a narrow slit or closed. Height 13.2-24.5, diam. 7.3-13.9 mm (15.2 × 7.8 mm).

Kidney broadly triangular. Main pulmonary vein well developed, side veins weakly to moderately developed.

Flagellum relatively short. Penis sub-cylindrical, its inner surface lined with single type of epithelium; verge present. Transition of penis to epiphallus externally

gradual. Spermathecal stalk more or less tapering, reservoir elongated-globose. DISTRIBUTION. Bolivia, Peru. 4 spp.

*Scutalus (Vermiculatus)* Breure, 1978  
Fig. 375

Breure, 1978: 166.

— Weyrauch, 1967a: 384 (nom. nud.).

— ? *Bocourtia* Rochebrune, 1882: 117 (t.-sp. *Bocourtia lymnaeiformis* Rochebrune, 1882; SD Zilch, 1959 — in Lymnaeidae).

TYPE SPECIES — *Bulinus bicolor* Sowerby, 1835; OD.

Shell globose to elongated, rather thin to solid, somewhat shining, of 5-6 flattened whorls; body whorl more or less inflated. Color whitish to yellowish, monochromatic or with variegated pattern or bands. Embryonic whorls radially wrinkled, postembryonic whorls irregularly striated or finely ribbed. Aperture ovate, with thin to slightly thickened, simple or a little expanded margins. Umbilicus absent. Height 11-52, diam. 6-22 mm (50.2 × 18.4 mm).

Kidney triangular, rather broad; second

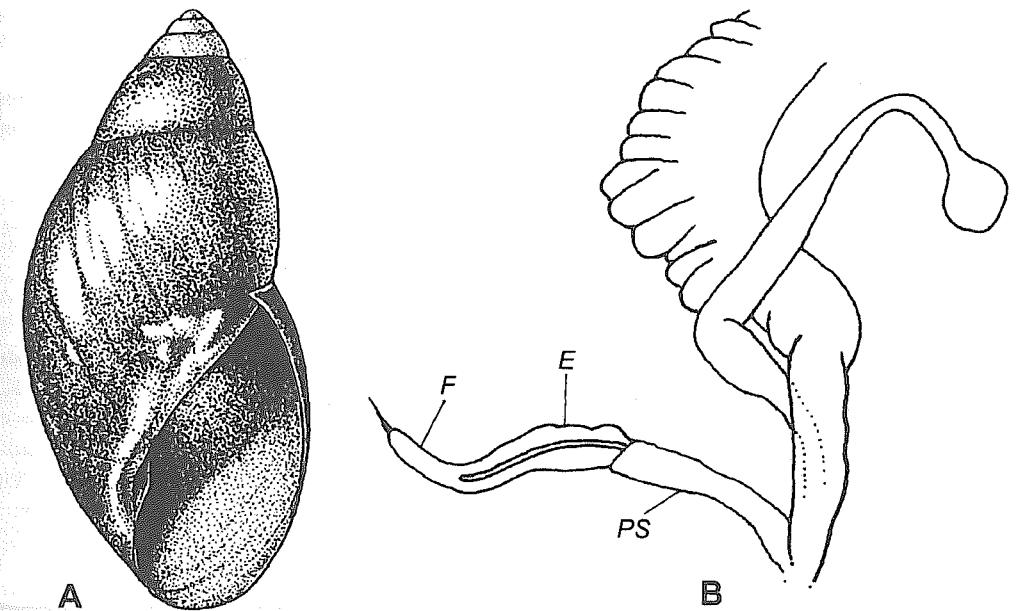


Fig. 374. *Scutalus (Suniellus) chillu* Breure, 1978. A — shell: Cuticucho, Rio Songo, Bolivia. Holotype. Senck. No. 249640. B — reproductive tract. After Breure, 1978.

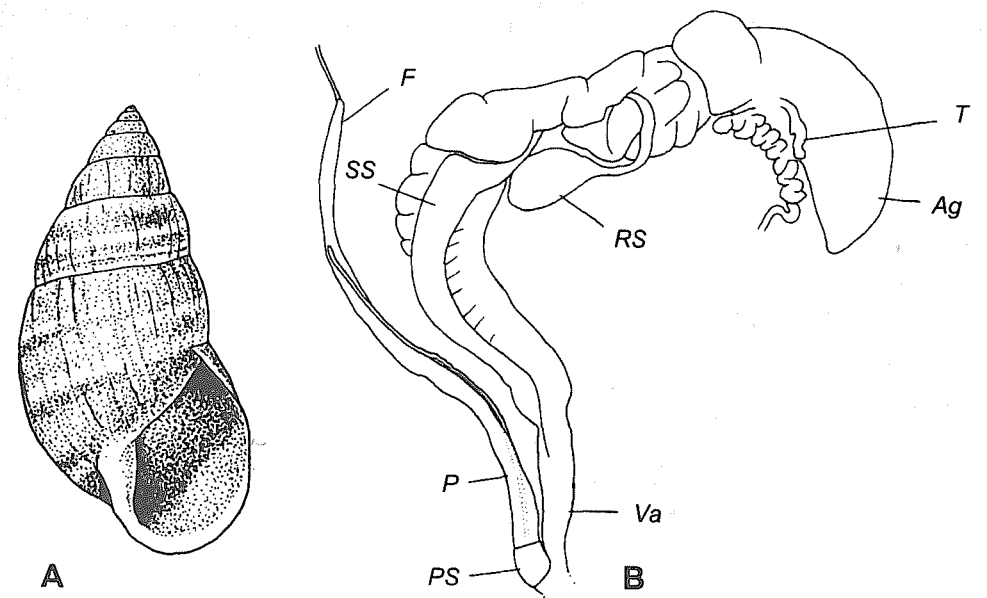


Fig. 375. A — ! *Scutalus (Vermiculatus) angrandi* (Morelet, 1860). Shell: Pikimachay, Ayacucho, Peru. Leiden. B — *Scutalus (Vermiculatus) bicolor* (Sowerby, 1835). Reproductive tract. After Breure, 1978.

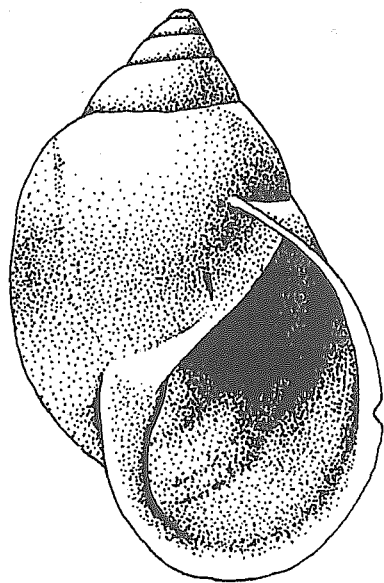


Fig. 376. *Scutalus (Scutalus) proteus* (Broderip, 1832).  
El Refugio near Santiago, Baja California, Mexico. Cardiff.

dary ureter partially open. Main pulmonary vein prominent and broad, side veins moderately to well developed, especially at anterior end, where vein parallel to principal vein may also be present.

Flagellum slender and rather long, penial retractor attached to its apex. Penis subcylindrical, with a sheath, its lumen in distal part narrowed by infoldings; upward lumen becomes wider, but narrows again at transition to proximal portion. Transition to epiphallus gradual internally and externally. Vagina moderately long. Spermathecal duct more or less tapering; reservoir subglobose.

DISTRIBUTION. Bolivia, Peru, Ecuador. 45 spp.

REMARK. Rochebrune (1882) described the genus *Bocourtia* from environs of Bangkok with two (not figured) specimens, collected by Bocourt. However, Bocourt, as far as I know, gathered mollusks in South and Central America; at the same time *Bocourtia lymnaeiformis* Rochebrune is very similar to *Bulimus anthisanensis* L. Pfeiffer, 1853 from Ecuador. So, if this synonymy is confirmed, the correct name for this taxon is *Bocourtia*.

*Scutalus (Scutalus s. str.)*  
Fig. 376

— *Spiroscutalus* Pilsbry, 1932: 392 [*Bulimulus (Scutalus)* sect.; t.-sp. *Bulimulus endospira* Pilsbry, 1932; OD].

Shell elongated-ovate to nearly globose or helicoid (depressed conic), solid, of 5-7 slightly convex whorls. Color light-grey to brownish with darker bands, sometimes with radial streaks of coalescent spots. Embryonic whorls pit-reticulate, postembryonic surface granulate or irregularly striated. Aperture ovate, with more or less expanded margins. Columella sometimes bears subvertical lamella within body whorl. Umbilicus cylindrical, narrow to rather broad. Height 28-55, diam. 15-35 mm (50.6 × 31.7 mm).

Kidney narrowly triangular; secondary ureter closed. Main pulmonary vein moderately to well developed, side veins moderately expressed. At anterior end, veins stronger, forming deltoid network.

Flagellum rather slender, penial retractor attached to its apex. Penis rather stout, subcylindrical, with narrowed lumen; short blind sac present in proximal part of penis, characterized by different type of epithelium. Transition to epiphallus gradual internally and externally. Penial sheath normally developed. Vagina rather short. Spermathecal duct subcylindrical, reservoir globose.

DISTRIBUTION. Coastal area of Ecuador, Peru, Bolivia; Baja California. 24 spp.

*Scutalus (Xenothauma) Fulton, 1896*  
Fig. 377

Fulton, 1896: 102 (*Helix* subg.). Breure, 1979: 79 (as syn. of *Scutalus s. str.*).

TYPE SPECIES — *Helix (Xenothauma) baroni* Fulton, 1896; monotypy.

Shell depressed, lenticular, rather solid, of 4.5 flattened whorls; last whorl with sharp peripheral keel, strongly descending in front. Color whitish or light-corneous. Embryonic whorls wrinkled. Later whorls bear coarse spiral cords. Aperture ovate, strongly oblique (subhorizontal), with widely reflexed and expanded margins. Umbilicus rather broad, partly covered. Height 12-15, diam. 26-30 mm (13.8 × 27.8 mm).

Vas deferens piercing penial sheath and

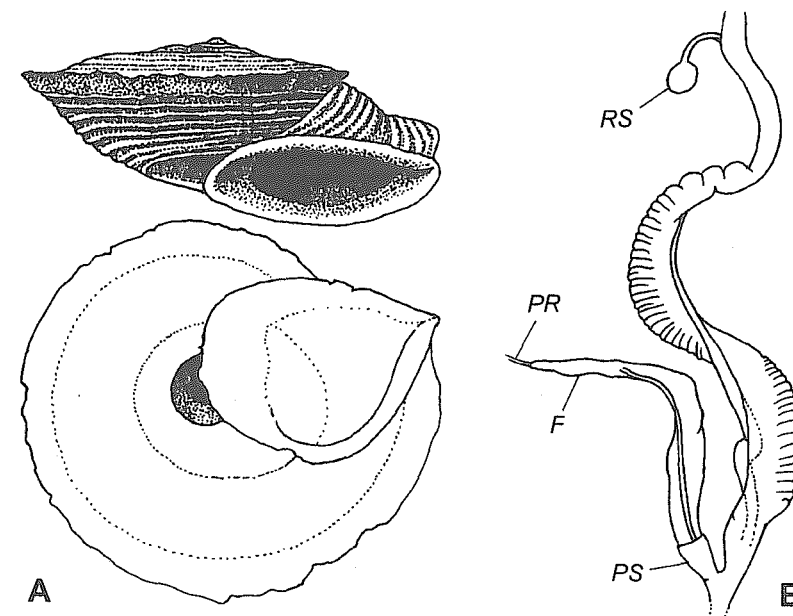


Fig. 377. A — *Scutalus (Xenothauma) baroni* (Fulton, 1896). Shell. Peru. Chicago No. 31369.  
B — ! *Scutalus (Xenothauma) cretaceus* (L. Pfeiffer, 1855). Reproductive tract. After Breure, 1978.

then passing under it, adherents to penis. Flagellum rather long. Spermathecal stalk slender, tapering towards small globose reservoir.

DISTRIBUTION. Peru. 2-3 spp.

*Kuschelenia* Hylton Scott, 1951  
Fig. 378

Hylton Scott, 1951: 539. Breure, 1979: 87 (*Scutalus* subg.).

TYPE SPECIES — *Kuschelenia simulans* Hylton Scott, 1951; monotypy.

Shell elongated-ovate, moderately to quite solid, shining, of about 6 flattened whorls. Color yellowish to light-brown, uniform or, more often, with darker radial streaks or spiral bands. Embryonic whorls with undulating, oblique, sometimes anastomosing wrinkles. Sculpture of postnuclear whorls of incrassate radial striae. Aperture ovate, with thin or slightly thickened, simple or hardly expanded margins. Umbilicus, a narrow perforation. Height 30-38, diam. 13-18 mm.

Kidney triangular, more or less broad;

secondary ureter partially open. Main pulmonary vein prominent and broad, side veins moderately to well developed, especially at anterior end, where vein parallel to main vein may also be seen.

Vas deferens more or less convoluted. Flagellum relatively short, swollen. Penis subcylindrical, lumen of its distal portion narrow; then lumen becomes wider, narrowing again at transition to upper part of penis, where large, rounded cells occur in subepithelial tissue. Transition to epiphallus gradual internally and externally. Lumen of proximal part of epiphallus and flagellum mostly surrounded by muscle fibres, which externally visible as local enlargement. Spermathecal stalk short, of 1/3-1/2 length of spermoviduct. Reservoir ovate.

DISTRIBUTION. N Argentina, Bolivia, Peru, ?Ecuador. 18 spp.

*Plectostylus* Beck, 1837  
Fig. 379

Beck, 1837: 58.

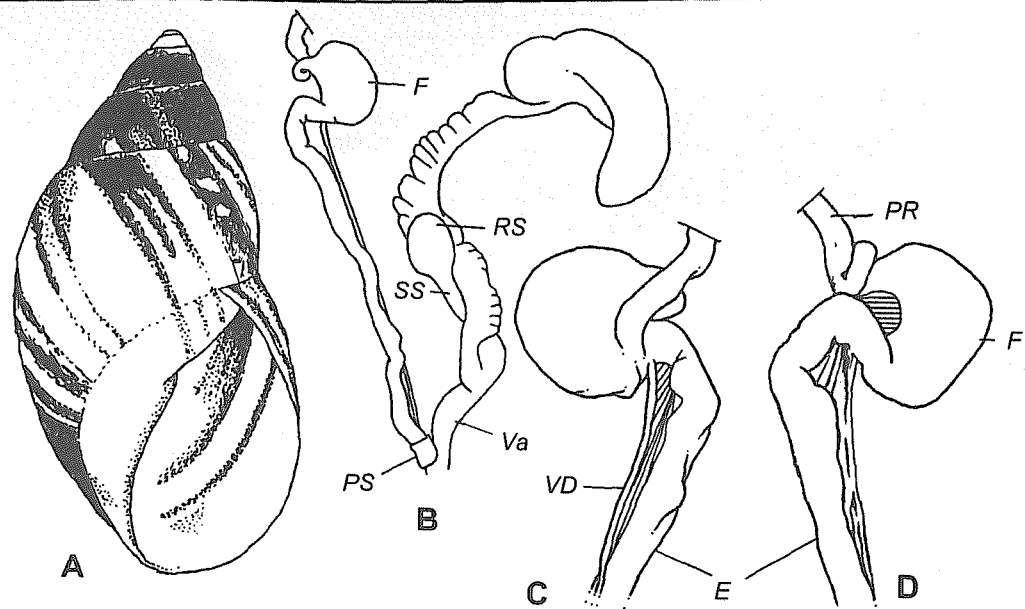


Fig. 378. A — *Kuschelenia simulans* Hylton Scott, 1951. Shell. After Hylton Scott, 1951. B, C, D — ! *Kuschelenia culminea* (d'Orbigny, 1835). B — reproductive tract. C, D — penis and flagellum in two views. After Breure, 1978.

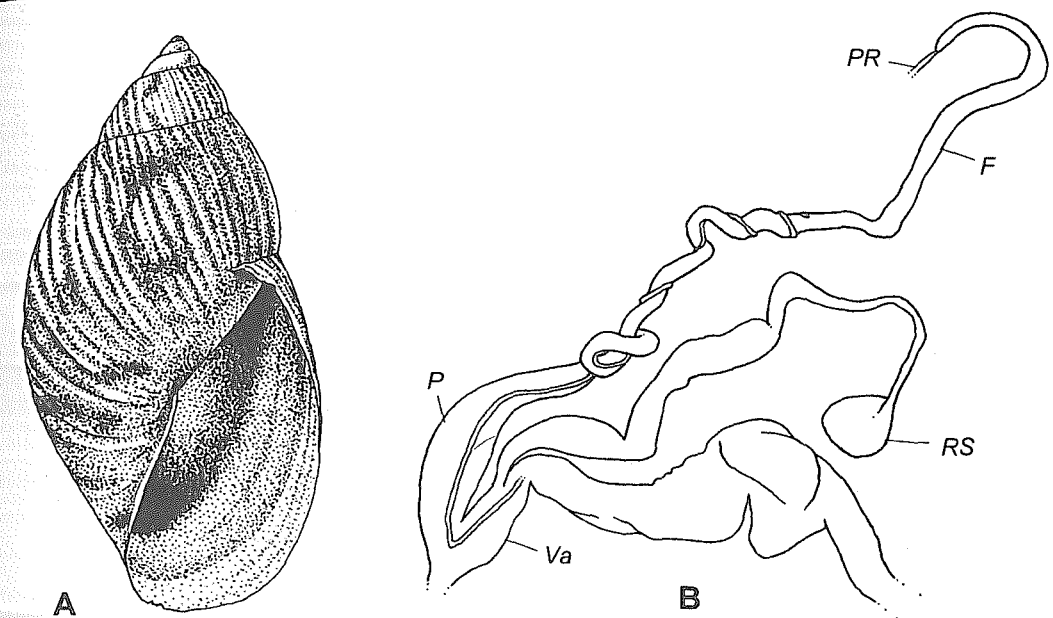


Fig. 379. *Plectostylus peruvianus* (Bruguière, 1789). A — shell. Peru. Lectotype. Paris. B — ! *Plectostylus coquimbensis* (Broderip, 1832). Reproductive tract. After Breure, 1978.

— *Plectostylus* Wurtz, 1947: 12 (nom. err. pro *Plectostylus* Beck, 1837).

Breure, 1979: 88.

TYPE SPECIES — *Bulimus peruvianus* Bruguière, 1789; SD Gray, 1847.

Shell elongated-ovate, rather solid, of 4-5 slightly convex whorls. Color whitish to yellowish with pattern of axial and spiral brown or blackish streaks and/or spots. Embryonic sculpture of hardly undulating axial wrinkles. Postnuclear surface finely granulate, with irregular radial striation. Aperture subovate, with thin and simple margins. Umbilicus absent. Height 24-45, diam. 12-23 mm (35.6 × 17.5 mm).

Kidney broadly triangular. Secondary ureter open over about 3/4 part of its length. Main pulmonary vein prominent; side veins well developed, especially at anterior end.

Flagellum subcylindrical. Penis markedly swollen, tapering towards epiphallus and passing into it without external differentiation. Penis sheath absent. Vagina relatively short. Spermathecal stalk more or less cylindrical, reservoir globose.

DISTRIBUTION. Chile, Peru. 26 spp.

*Stenostylus* Pilsbry, 1898  
Fig. 380

Pilsbry, 1898 (1897-1898): 184, 313 (*Drymaeus* subg.).

TYPE SPECIES — *Bulimus nigrolimbatus* L. Pfeiffer, 1854; OD.

Shell ovate, rather thin, of 4-6 slightly convex whorls. Color yellowish to light-brown, with darker radial streaks. Embryonic whorls with reticulated sculpture of radial riblets and spiral striae; postnuclear whorls slightly, irregularly, radially wrinkled and/or spirally striated. Aperture ample, ovate, pearly inside, with thin and simple margins. Umbilicus closed. Height 16-52, diam. 10-36 mm (24.0 × 15.2 mm).

Flagellum comparatively short, subcylindrical. Penis also subcylindrical; no clear external boundary between penis and epiphallus. Penis sheath short. Spermathecal stalk more or less cylindrical, reservoir ovate.

DISTRIBUTION. ?Venezuela, Peru, ?Ecuador, ?Colombia. 5-6 spp.

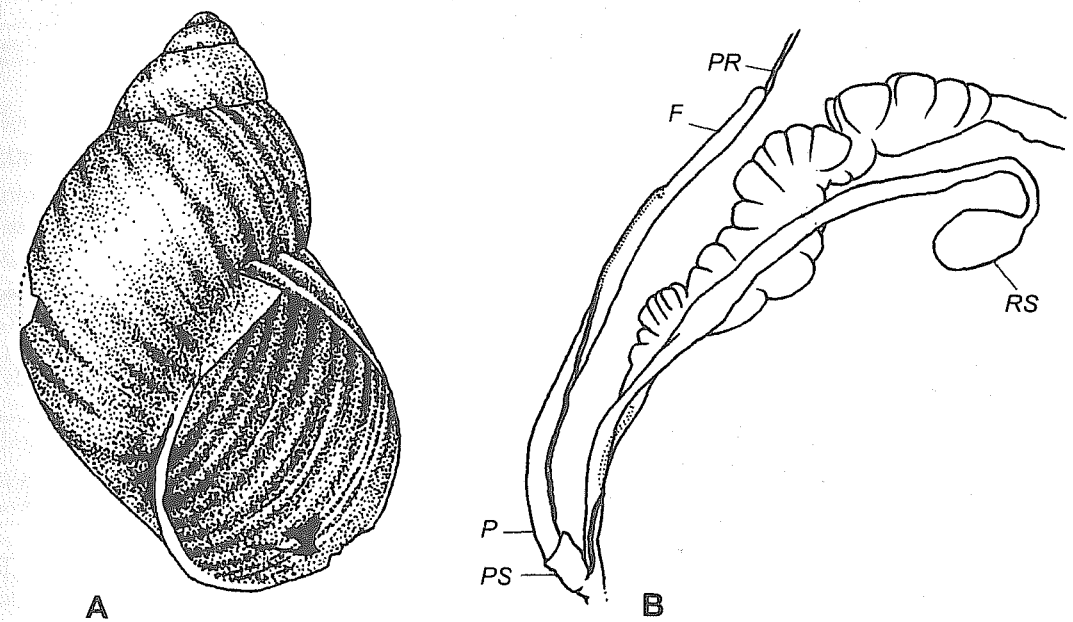


Fig. 380. A — *Stenostylus nigrolimbatus* (L. Pfeiffer, 1854). No data. Chicago No. 466. B — ! *Stenostylus zilchi* Weyrauch, 1956. Reproductive tract. After Breure, 1978.



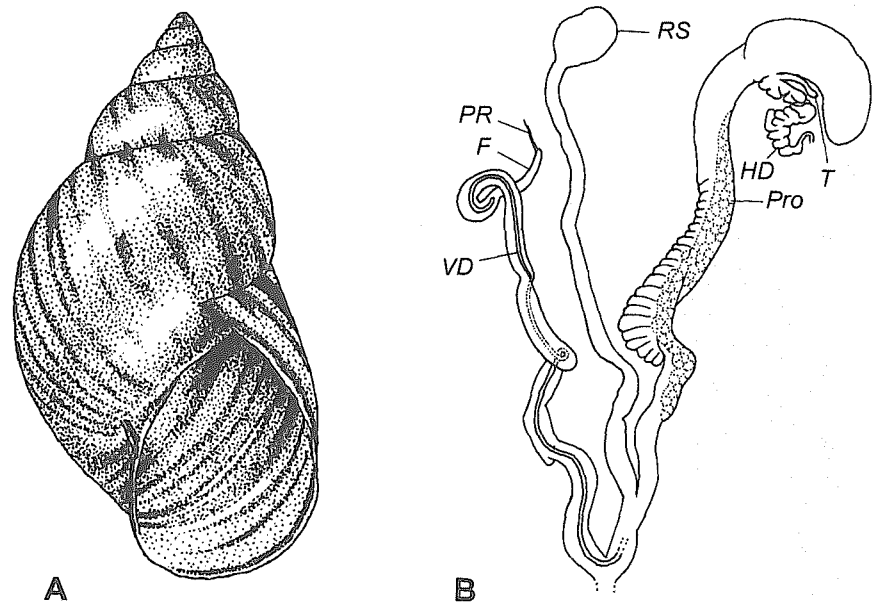


Fig. 381. *Discoleus aguirrei* (Doering, 1884).  
A — shell: Argentina, Prov. of Buenos Aires. Basel No. 8218-a. B — reproductive tract. After Breure, 1978.

*Discoleus* Breure, 1978  
Fig. 381

Breure, 1978: 195.

TYPE SPECIES — *Eudioptus aguirrei* Doering, 1884; OD.

Shell ovate-conic, rather thin, shining, of 5-6 rather convex whorls. Color yellowish, monochromatic or, more often, with brownish irregular radial streaks. Embryonic sculpture of crowded incised fine spiral lines. Postembryonic surface irregularly radially striated. Aperture ample, ovate, with simple and thin margins; columellar margin hardly dilated above. Umbilicus, a narrow slit. Height 20-30, diam. 9.5-16.0 mm (22.7 × 11.8 mm).

Kidney broadly triangular; distal half of secondary ureter open. Main pulmonary vein well developed, side vessels weak.

Flagellum relatively short. Penis subcylindrical, passes into epiphallus without external differentiation. Penis sheath absent. Epiphallus more or less tapering. Spermathecal stalk generally subcylindrical, reservoir globose or truncated-globose.

DISTRIBUTION. Argentina. 10 spp.

*Eurytus* Albers, 1850  
Fig. 382

Albers, 1850: 169.

TYPE SPECIES — *Helix pentadina* d'Orbigny, 1835; SD Martens in Albers, 1860.

Shell ovate, more or less elongated, thin to solid, of 5-6 slightly convex whorls. Color light- to dark-brown, uniform or with oblique spiral series of darker spots. Embryonic whorls distinctly granulate, later whorls nearly smooth, granulate or with spiral rows of short lines and spirally arranged puckered bands. Aperture ovate, with slightly thickened, narrowly expanded margins. Columellar margin with crescent-shaped channel or simple. Height 24-85, diam. 13-45 mm (66.1 × 34.2 mm).

Vas deferens adhering to vagina and fastened to it by numerous fibres. Flagellum rather short, tapering. Penis with sheath attached at both ends and not visible without dissection. Penis long, internally with a few not long longitudinal folds. Penial retractor attaching to flagellum subapically. Vagina stout, moderately long. Spermatheca short, enlarged, reser-

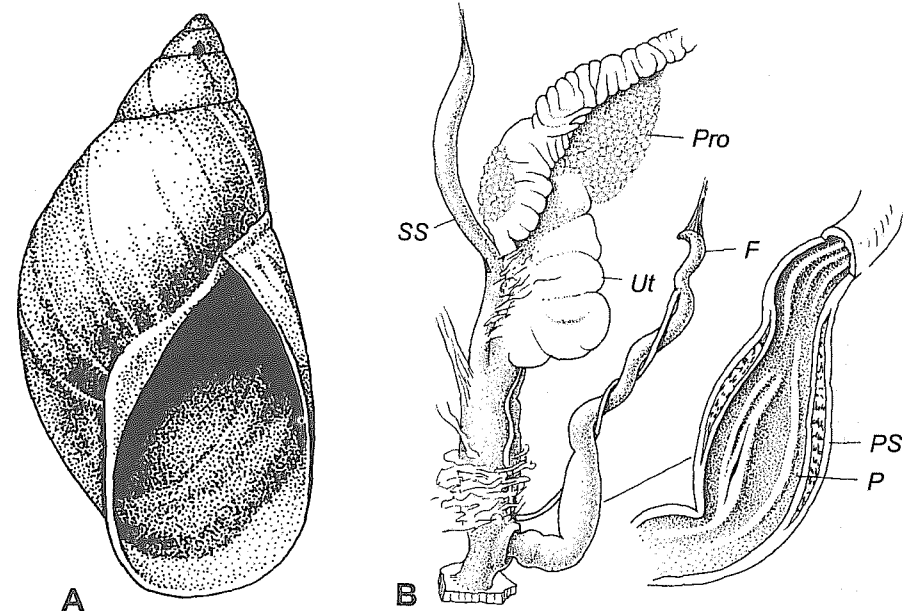


Fig. 382. A — *Eurytus pentadinus* (d'Orbigny, 1835).  
Shell: Guajara-Assú Falls, Mamoré River [border between Brazil and Bolivia]. Phil. No. 109306.  
B — ! *Eurytus coloratus* (Nyst, 1845). Reproductive tract and interior of penis: Socorpa Mission, Sierra de Perija, Magdalena, Colombia. Paris.

voir expressed to various extent, with apical ligament.

DISTRIBUTION. West Indies (St. Lucia, St. Vincent), Venezuela, Brazil (Para State), Bolivia, Peru, Ecuador, Colombia. About 65 spp.

*Newboldius* Pilsbry, 1932  
Fig. 383

Pilsbry, 1932: 398.

TYPE SPECIES — *Newboldius inca* Pilsbry, 1932 (= *Bulinus crichtoni* Broderip, 1836); OD.

Shell elongated-fusiform, very solid, somewhat shining, of 5.5-6 rather convex whorls; body whorl nearly straight (a little ascending in front). Color grey to light-corneous, nearly uniform or with 3-4 brownish bands and light irregular radial streaks. Embryonic whorls often eroded; when fresh — with grating sculpture of radial riblets and spiral striation. Postembryonic whorls covered with coarse irregular radial wrinkles, sometimes with spiral lines and/or malleation. Aperture elongated-ovate, subvertical, basal part some-

what recurved, forming canal, columella obliquely truncated; margins thick, broadly expanded and reflexed, brownish to pink. Parietal callus usually well developed. Umbilicus completely closed. Height 65-72, diam. 27-30 mm (66.8 × 28.2 mm).

Jaw with many narrow converging plaits.

Kidney triangular, curved; secondary ureter closed. Main pulmonary vein rather prominent and branched anteriorly.

Vas deferens adheres to penis and epiphallus, opening by simple pore. Flagellum slightly tapering, rather short, thin-walled, its inner surface with small, partly interrupted and waved or zigzag folds and 1 high, thin ridge. Epiphallus internally with many unequal, high, narrow folds. Penis subcylindrical, long, internally with several strong ridges, enveloped in sheath. It narrows abruptly at entrance of vas deferens, sheath becomes adnate.

DISTRIBUTION. Peru. 2 spp.

*Oxychona* Mörch, 1852  
Fig. 384

Mörch, 1852: 14. Breure, 1979: 96.

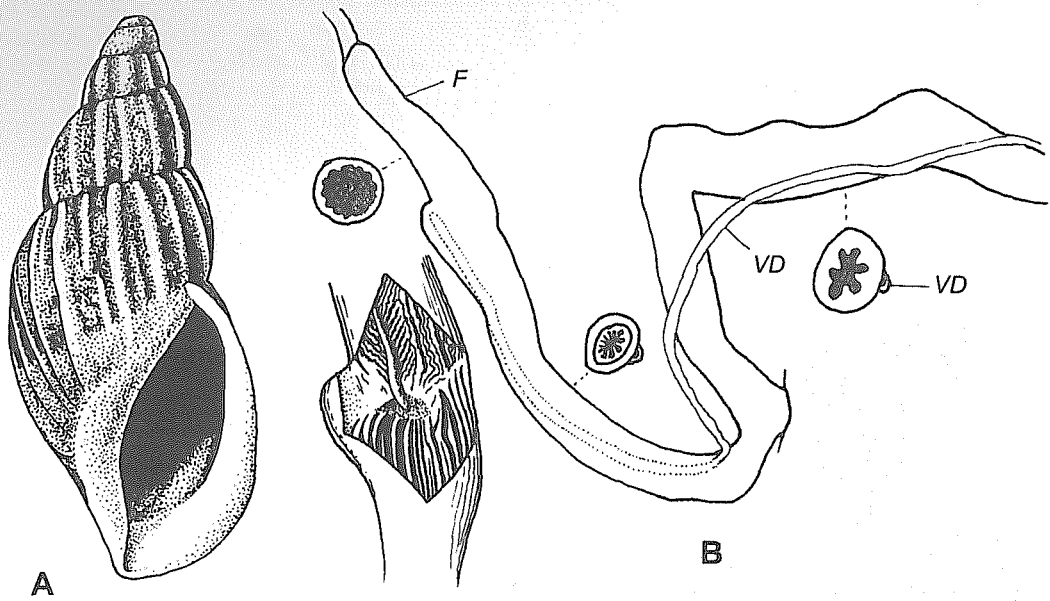


Fig. 383. *Newboldius crichtoni* (Broderip, 1836).  
A — shell: E of Gerro de Pasco, Rio Paucartambo, 1800 m, Peru. Phil. No. 204468. B — penis and details of its structure. After Pilsbry, 1932.

TYPE SPECIES — *Trochus bifasciatus* Burrow, 1815; monotypy.

Shell conic, thin to moderately thin, shining, of 6-7 nearly flat whorls. Body whorl sharply keeled, with flat to concave base. Color uniformly whitish or with purplish-brown spiral bands above keel. Embryonic whorls with grating sculpture of radial riblets and spiral striae of equal strength. Postembryonic surface with spiral incised lines, sometimes malleated. Aperture very oblique and skewed, triangular; its margins expanded and reflexed below peripheral keel. Umbilicus closed. Height 13-17, diam. 14-19 mm (15.0 × 17.2 mm).

Flagellum subcylindrical, relatively long, internally with double curved longitudinal fold. Penis more or less cylindrical, without external boundary with epiphallus. Penis sheath normally developed. Free oviduct practically absent. Vagina very short, swollen. Spermathecal shaft more or less subcylindrical, its upper part narrow, reservoir globose.

DISTRIBUTION. Brazil. About 10 spp.

*Cochlorina* Jan, 1830  
Fig. 385

Jan, 1830: 5.

— *Navicula* Spix, 1827: 22 [nom. praeocc., non Blainville, 1825; t.-sp. *Navicula fasciata* Spix, 1827 (= *Helix navicula* A. Wagner in Spix, 1827); monotypy].

— *Zaplagius* Pilsbry, 1896: 115 (t.-sp. *Helix navicula* A. Wagner in Spix, 1827; OD).

Breure & Eskens, 1981: 94.

TYPE SPECIES — *Bulimus aurisleporis* Bruguière, 1792; SD Bequaert, 1948.

Shell conic to ovate-conic, thin to solid, of 5-6 flattened whorls; last ascending in front, rounded or keeled, with flat to concave base. Color whitish to reddish-brown, uniform or banded, streaked or maculated with dark. Embryonic with grating sculpture of radial riblets and spiral striae. Postembryonic surface finely radially striated, malleated to granulate and/or with spiral grooves. Aperture subvertical, auriculate or triangular, with thin, expanded and reflexed margins. Umbilicus, a narrow slit. Height 16-45, diam. 10-27 mm (*navicula*: 25.3 × 31.2, *aurisleporis*: 44.6 × 26.6 mm).

Talon long, vermiform, exposed. Flagellum more or less tapering and relatively long, internally with double-curved longitudinal fold. Penis subcylindrical, passing without external boundary into epiphallus. Penis internally with rather strong, irregu-

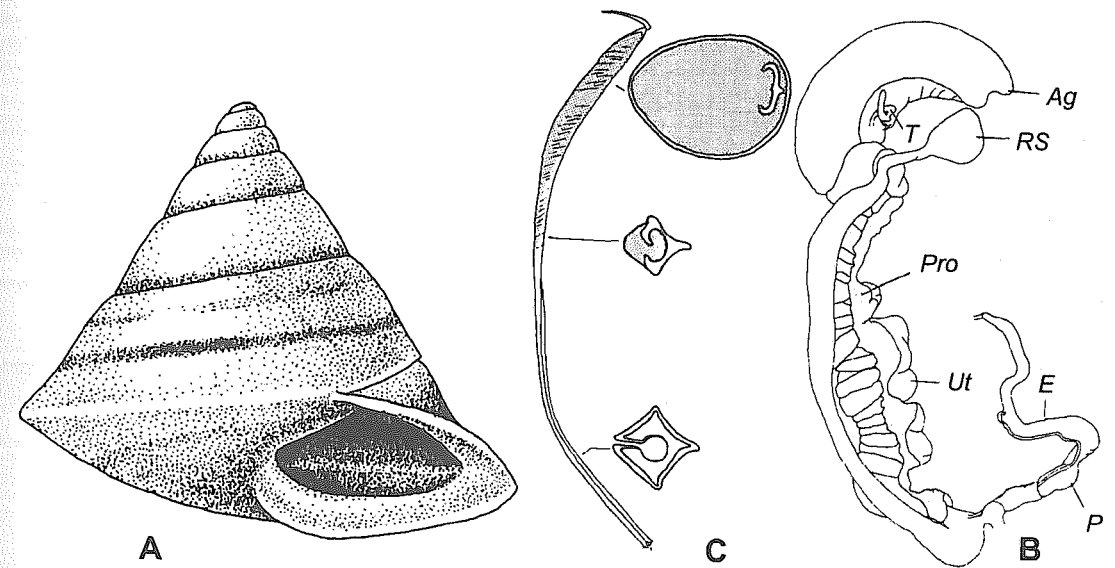


Fig. 384. A — *Oxychona bifasciata* (Burrow, 1815). Shell: Brazil. Phil. No. 25730.  
B, C — ! *Oxychona blanchetiana* (Moricand, 1833). B — reproductive tract. C — spermatochore. After Breure & Eskens, 1981.

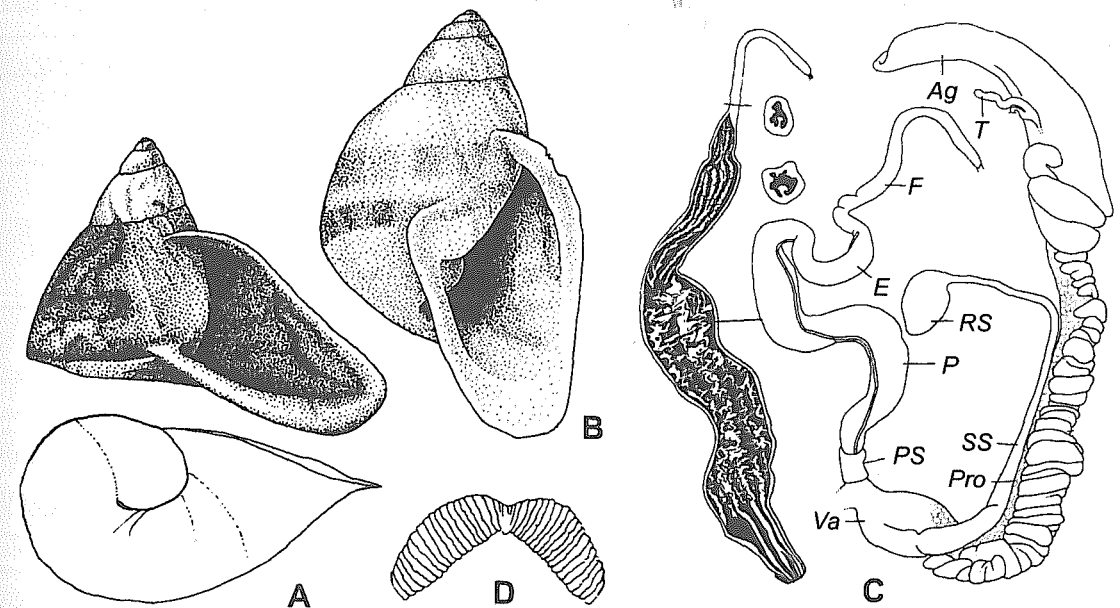


Fig. 385. A — ! *Cochlorina navicula* (Spix, 1827). Shell: Cachoeira do Itapemirim, Espirito Santo, Brazil. Moscow No. 19581 (Leiden).  
B, C, D — *Cochlorina aurisleporis* (Bruguière, 1792). B — shell: "Massif de la Bresil". Paris. C — reproductive tract and interior of penis. D — jaw. After Breure & Eskens, 1981.

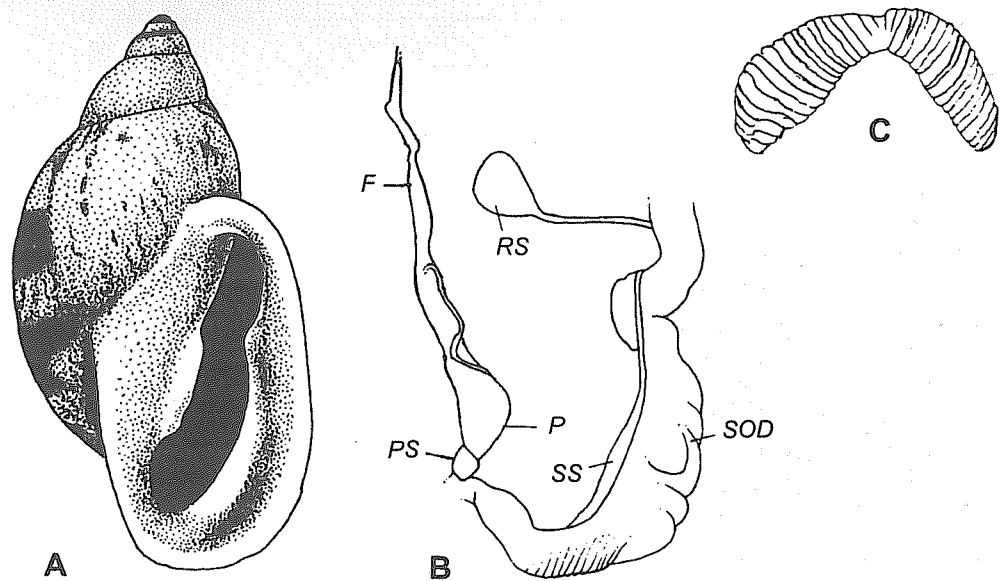


Fig. 386. *Otostomus signatus* (Spix, 1827).  
A — shell: Brazil. Phil. No. 23402. B — reproductive tract. C — jaw. After Breure & Eskens, 1981.

lar, longitudinal pilasters, which transversally connected by thin folds, thus forming complex pattern. Pilasters in epiphallus more or less plicate. Penis sheath short. Oviduct and vagina very short. Spermathecal stalk subcylindrical, slightly enlarged downward. Reservoir elongated-globose.

DISTRIBUTION. Brazil. 13 spp.

*Otostomus* Beck, 1837  
Fig. 386

Beck, 1837: 55. Breure, 1979: 96. Breure & Eskens, 1981: 92.

TYPE SPECIES — *Auris signata* Spix, 1827; SD Gray, 1847.

Shell elongated-ovate, solid, of 4.5-5 slightly convex whorls; last somewhat ascending in front. Color whitish, with broad, brown, sometimes interrupted bands. Embryonic whorls with grating sculpture of radial riblets and spiral striae. Surface of postembryonic whorls granulate and irregularly radially striated. Aperture narrow, auriculate, subvertical, more or less skewed, with expanded and broadly reflexed margins; inner side of palatal and basal margin with callous flange. Columel-

lar margin bears strong lamellar fold whose edge sometimes uneven. Umbilicus minute. Height 40-42, diam. 23-24 mm (42.0 × 23.2 mm).

Flagellum subcylindrical, relatively long, internally with double-curved longitudinal fold. Epiphallus tapering. Penis swollen above upper edge of very short sheath. There is no visible boundary between penis and epiphallus. Vagina very short. Spermathecal stalk subcylindrical, reservoir elongated-globose.

DISTRIBUTION. Brazil. 1 sp.

*Anctus* Martens, 1860  
Fig. 387

Martens in Albers, 1860: 214 (*Bulimulus* subg.).

TYPE SPECIES — *Bulimulus (Anctus) anchistomus* "Wagner" Martens, 1860 (= *Bulimulus angiosomus* J. Wagner, 1827); monotypy.

Shell acuminate-ovate, rather solid, shining, of 7-8 slightly convex whorls. Color white or light-grey with brown or blackish radial streaks; aperture ochraceous inside. Embryonic whorls smooth, later with very fine, silky radial striae and deli-

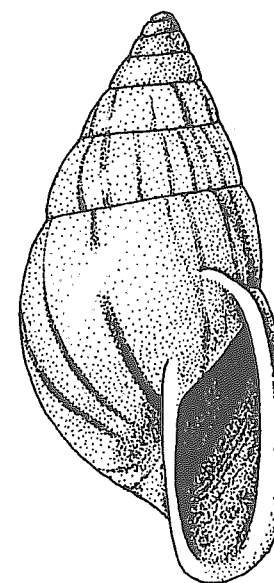


Fig. 387. *Anctus angiosomus* (J. Wagner, 1827).  
Brazil. Phil. No. 26001.

cate spiral engraved lines (especially on body whorl behind aperture). Aperture narrow, subvertical, with thin, shortly reflexed peristome; columellar and palatal margins straight, (sub)parallel to each other. Umbilicus closed, umbilical depression present. Height 20-26, diam. 10-12 mm (25.5 × 12.0 mm).

DISTRIBUTION. Brazil (Bahia Prov.). 2-3 spp.

REMARK. See remark to *Moricandia*.

*Llaucanianus* Weyrauch, 1967  
Fig. 388

Weyrauch, 1967a: 420. Breure, 1979: 101.

TYPE SPECIES — *Llaucanianus haasi* Weyrauch, 1967; OD.

Shell ovate-conic, solid, not shining, of 6.3-7 flattened whorls. Color pink, monochromatic or with oblique brown streaks on early postembryonic whorls; aperture orange inside. Reticulated apical sculpture of fine radial riblets and finer spiral cords. Postnuclear whorls with very delicate spiral striae. Aperture elongated-ovate, with white, thin, expanded margins; subvertical

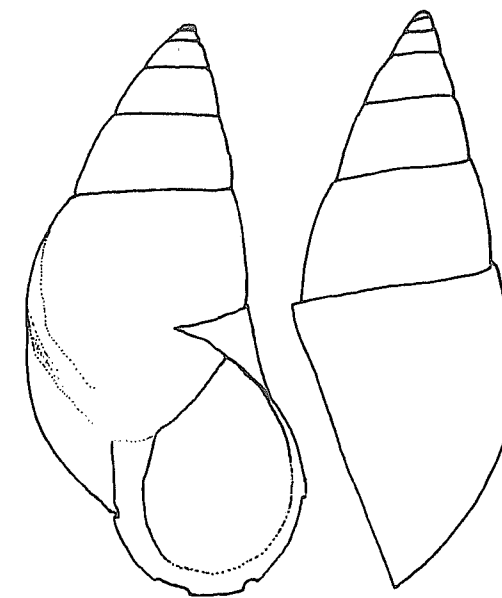


Fig. 388. *Llaucanianus haasi* Weyrauch, 1967.  
After Weyrauch, 1967a.

columellar margin well reflexed. Umbilicus, a narrow perforation. Height 31.9-40.5, diam. 15.4-20.6 mm.

DISTRIBUTION. Peru (Dept. Cajamarca). 1 sp.

*Neopetraeus* Martens, 1885  
Fig. 389

Martens, 1885: 194 (*Otostomus* subg.).

TYPE SPECIES — *Otostomus millegranus* Martens, 1883; SD Pilsbry, 1898.

Shell ovate to ovate-conic, rather solid, of about 6 slightly convex whorls; last scarcely ascending in front. Coloration consists of whitish to pink background and brown spots and streaks in various pattern. Apical sculpture of fine regular radial riblets and finer spiral grooves in interstices. Postembryonic surface somewhat malleate, with granulation formed by intersection of radial and spiral sculptural elements. Aperture rounded, subvertical, with thin, more or less expanded and reflexed margins. Umbilicus, a deep and narrow slit. Height 22-47, diam. 12-26 mm (36.0 × 21.6 mm).

Kidney broadly triangular, with curved

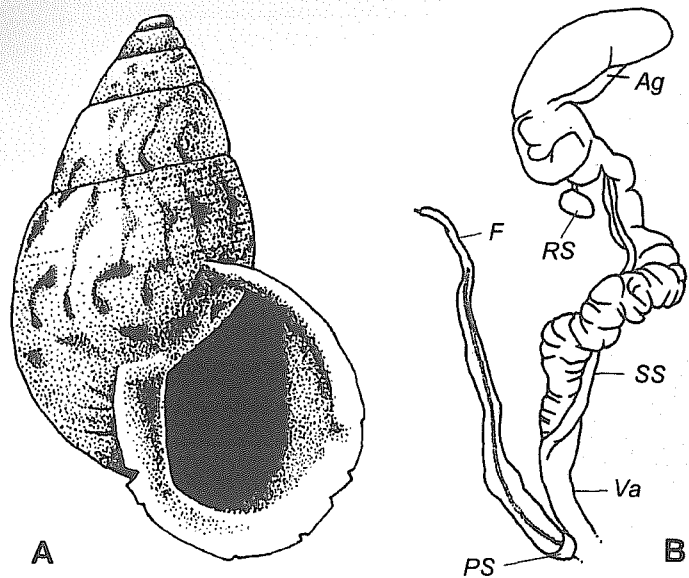


Fig. 389. A — *Neopetraeus millegranus* (Martens, 1883).  
Shell: "Balzas am oberen Marañon, Peru". Senck. No. 23076.  
B — ! *Neopetraeus camachoï* Weyrauch, 1967. Reproductive tract. After Breure, 1978.

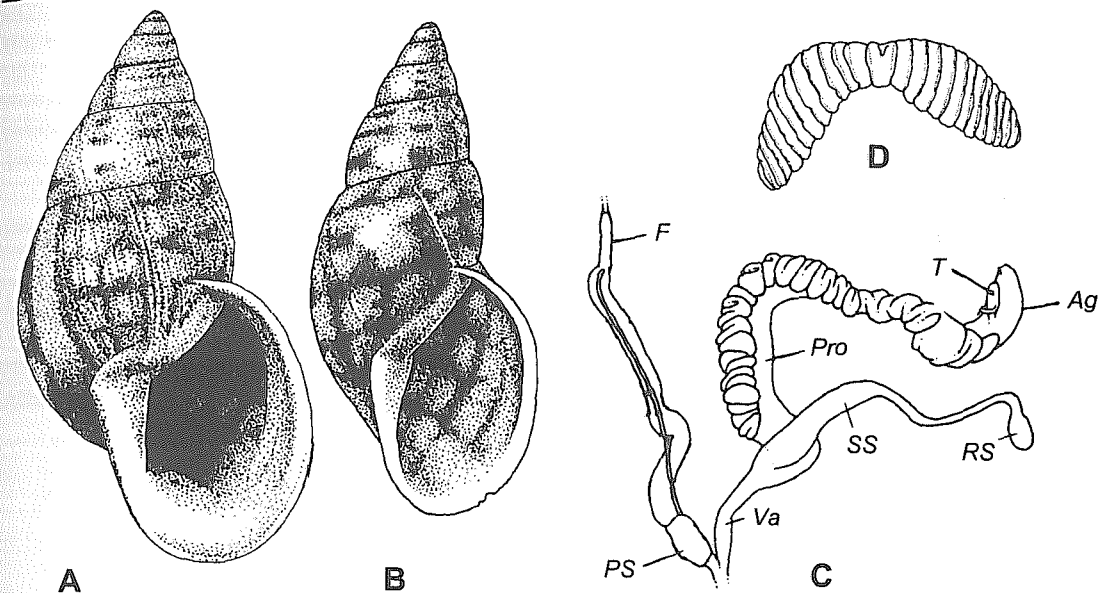


Fig. 390. A, B — *Drymaeus (Drymaeus) hygrohylaëus* (d'Orbigny, 1835).  
Shells. A — Yungas, Chiquitos, Bolivia. Syntype. Paris. B — Bolivia. Phil. No. 107817. C — reproductive tract. D — jaw. After Breure & Eskens, 1981.

pericardial side. Secondary ureter closed except for short distance near its anterior end. Main pulmonary vein prominent, ramified anteriorly.

Flagellum generally slender. Penis subcylindrical, passing gradually into slightly tapering epiphallus. Penis sheath very short. Free oviduct extremely short, vagina of moderate length. Spermathecal duct subcylindrical, reservoir globose.

DISTRIBUTION. Peru. About 30 spp.

### *Drymaeus* Albers, 1850

Albers, 1850: 155 (*Bulimus* subg.). Breure, 1979: 103.

TYPE SPECIES — *Helix hygrohylaëa* d'Orbigny, 1835; SD Pilsbry, 1898.

Shell ovate to oblong, thin to solid, of 5-6 moderately to slightly convex whorls. Color whitish, yellowish or pink, usually with darker radial streaks, spots or spiral bands. Embryonic sculpture reticulated, of radial riblets and spiral striae; postembryonic surface weakly radially sculptured. Aperture generally ovate to subtriangular, with simple to broadly expanded margins.

Umbilicus closed or in form of tiny perforation or slit.

DISTRIBUTION. S and Central America with southern parts of N America.

### *Drymaeus (Drymaeus s. str.)* Fig. 390

— *Hamadryas* Albers, 1850: 155 [nom. praeocc., non Hübner, 1806 (Lepidoptera); *Bulimus* subg.; t.-sp. *Helix zoographica* d'Orbigny, 1835; SD Breure, 1979].

— *Semiciusaria* L. Pfeiffer, 1856: 162 (*Bulimus* subg.; t.-sp. *Bulimus semiciusaria* Petit, 1843; monotypy).

— *Mormus* Martens in Albers, 1860: 216 (*Bulimulus* subg.; t.-sp. *Helix papyracea* Mawe, 1823; OD).

— *Goniognathmus* Fischer et Crosse in Crosse & Fischer, 1875 (1870-1902): 473 (*Bulimulus* "groupe"; t.-sp. *Bulimus lattrei* L. Pfeiffer, 1847; OD).

Shell oblong-ovate, thin to solid, of 5-7 slightly convex whorls. Color whitish, yellowish or pink, with radial streaks, spiral bands and/or spots of brown, black or yellow. Postnuclear surface with incassate radial striae. Aperture elongated to obliquely ovate, triangular or inversely auriculate,

with simple to broadly expanded margins. Umbilicus, a narrow perforation. Height 30-44, diam. 13-20 mm (41.1 × 18.0 mm).

Talon short but stout, exposed. Flagellum subcylindrical to ovoid, relatively short, with terminal attachment of retractor. Visible boundary between epiphallus and penis absent. Internally penis with thin, longitudinal, more or less corrugated folds. Penis sheath rather short or absent. Free oviduct very short. Vagina relatively long. Spermathecal shaft subcylindrical or tapering, sometimes rather short; reservoir generally globose, but in species with shortened duct not expressed as such.

DISTRIBUTION. Venezuela, Brazil, Uruguay, Argentina, Bolivia, Peru, Ecuador, Colombia, Panama, Costa Rica, Nicaragua, Honduras, Guatemala, Mexico. About 200 nominal spp. & subspp.

### *Drymaeus (Metadrymaeus) josephus* Fig. 391

Pilsbry, 1926: 87 (*Drymaeus* sect.).

TYPE SPECIES — *Bulimus josephus* Angas, 1878; OD.

Shell elongated-ovate, rather thin, shin-

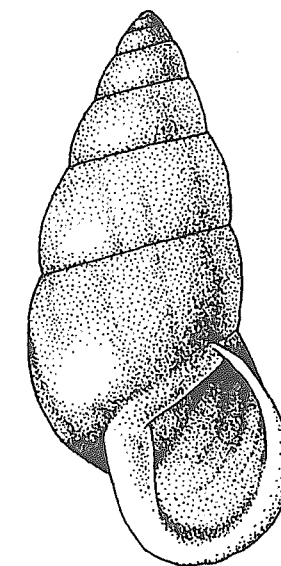


Fig. 391. *Drymaeus (Metadrymaeus) josephus* (Angas, 1878).  
Costa Rica. Phil. No. 25908.



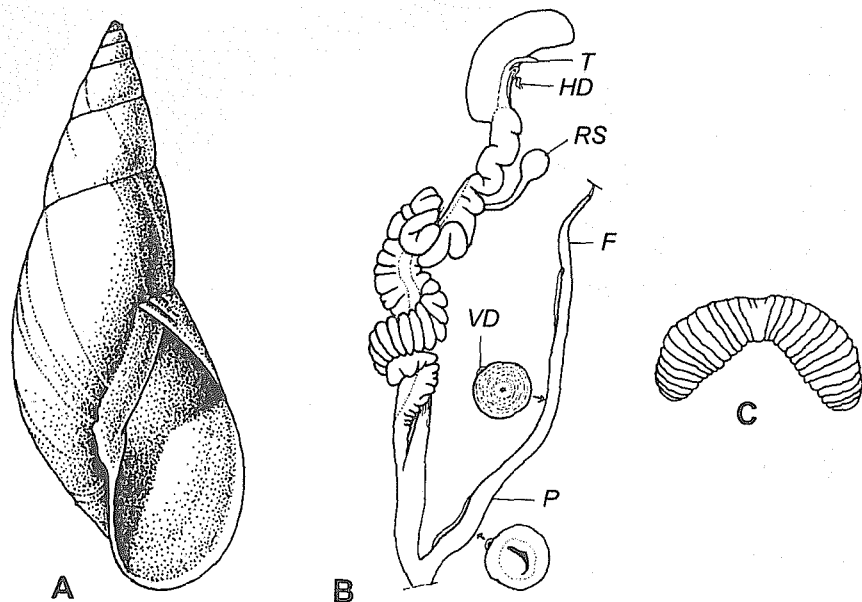


Fig. 392. *Drymaeus (Orodrymaeus) farrisi* (L. Pfeiffer, 1858).  
A — shell: W side of Marañon, around Chaqua, Peru. Moscow No. Lc-21372. B — reproductive tract. After Pilsbry, 1932. C — jaw. After Breure & Eskens, 1981.

ing, of about 7 moderately convex whorls. Color white with weak, light-brown, radial streaks. Embryonic whorls spirally pitted. Postnuclear whorls locally with weak spiral lines. Aperture rounded, subvertical, with widely reflexed and expanded margins. Umbilicus, a narrow perforation. Height 28.5-44.0, diam. 14-20 mm (33.1 × 15.0 mm).

DISTRIBUTION. Costa Rica, Panama. 2 spp.

*Drymaeus (Orodrymaeus)*  
Pilsbry, 1926)  
Fig. 392

Pilsbry, 1926: 87 (*Drymaeus* sect.). Breure, 1979: 103 (as syn. of *Drymaeus* s. str.).

TYPE SPECIES — *Bulimus farrisi* L. Pfeiffer, 1858; OD.

Shell high-conic, slender, rather thin, of 6-7 flattened to nearly flat whorls. Color white, yellowish or pinkish, sometimes with lighter vague streaks; aperture inside usually orange. Embryonic whorls with microscopic, quite regular reticulated sculpture. Subsequent whorls with fine, irregular radial wrinkles and shallow spiral lines. Aperture pointed-ovate, with thin, simple

margins. Umbilicus narrow, slit-like. Height 27-52, diam. 10-21 mm (46.2 × 17.2 mm).

Talon finger-shaped. Vas deferens tightly adhering to vagina and penis. Flagellum moderately long, with terminal retractor. Epiphallus + penis long, thick-walled, with very narrow lumen, without marked boundary. Penis sheath absent. Free oviduct short, vagina markedly longer. Spermathecal stalk long, subcylindrical, reservoir small, globose.

DISTRIBUTION. Peru, Ecuador, Colombia. 1 sp.

*Drymaeus (Ornatimormus)*  
Weyrauch, 1958)  
Fig. 393

Weyrauch, 1958: 131 (*Mesembrinus* subg.)

TYPE SPECIES — *Drymaeus angulobasis* Pilsbry, 1944; OD.

Shell slender, subfusiform, moderately solid, shining, of 6-7 slightly convex whorls. Last whorl with rounded basal keel. Color creamy, uniform or with brown (radial or zigzagged) streaks, or consisting of irregular pattern of dark spots. Both em-

bryonic and postembryonic whorls without regular sculpture. Aperture ovate, acuminate at both ends, with narrowly reflexed margins; columellar margin vertical. Umbilicus narrowly open. Height 30-40, diam. 14-19 mm (37.0 × 17.9 mm).

DISTRIBUTION. Northern and central parts of S America. Over 30 spp.

*Drymaeus (Mesembrinus)* Albers, 1850)  
Fig. 394

Albers, 1850: 157 (*Bulimus* subg.).

— *Antidrymaeus* Gemain, 1907: 59 [t.-sp. *Bulimulus (Drymaeus) inusitatus* Fulton, 1900; SD Pilsbry, 1926].

— *Leptodrymaeus* Pilsbry, 1946a: 23 (*Drymaeus* sect.; t.-sp. *Bulimus dominicus* Reeve, 1950; OD).

— *Leptomormus* Weyrauch, 1958: 136 (*Drymaeus* subg.; t.-sp. *Drymaeus bequaerti* Weyrauch, 1956; OD).

— *Diaphanomormus* Weyrauch, 1964: 57 [t.-sp. *Drymaeus (Diaphanomormus) coelestini obesus* Weyrauch, 1964; OD].

Breure, 1979: 116.

TYPE SPECIES — *Helix virgulata* Férussac, 1821; SD Martens in Albers, 1860.

Shell dextral or sinistral, elongated-ovate to ovate, thin to solid, shining, of 5-6.5 flattened to rather convex whorls. Color whitish to yellowish, uniform or with brownish spiral bands or radial streaks that may be divided into series of spots. Postembryonic whorls practically smooth or with irregular radial striation and/or fine spiral lines. Aperture ovate, more or less oblong, slightly oblique, with thin and simple (sometimes expanded) margins. Umbilicus, a minute lateral crack. Height 20-30, diam. 10-17 mm (26.2 × 15.6 mm).

Jaw with one median, slightly narrowing downward plate; next to it on both sides there are 3-4 narrower plates; "wings" of jaw occupied by a few broad, flat plaits with very narrow interspaces.

Kidney very long and narrow, both ureters completed.

Talon hidden in albumen gland. Vas deferens bound to vagina by thin transparent membrane, then running under sheath and entering epiphallus below short, tapering flagellum. Epiphallus long, with narrow lumen and 4 longitudinal pilasters. Penis sac-like, internally with spirally coiled

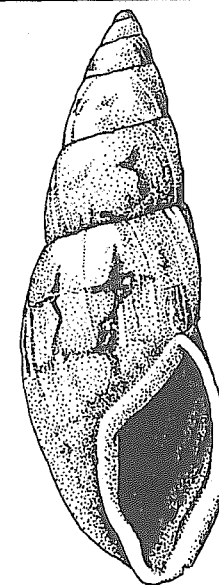


Fig. 393. *Drymaeus (Ornatimormus) angulobasis* Pilsbry, 1944.  
Oreja de Capele, Rio Tarma, Peru. Holotype. Phil. No. 180022.

verge. Penis sheath covers basal portion of penis, atrium and lower part of vagina; sometimes absent. Free oviduct practically absent. Vagina long. Spermatheca without visible division into stalk and reservoir, thick-walled, internally with large conic tubercles, with apical ligament arising on surface of prostata.

DISTRIBUTION. Venezuela, Guiana, Surinam, French Guyana, Brazil, Peru, Colombia, Panama, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala, Belize, Mexico, S USA, West Indies. About 290 nominal spp. & subspp.

REMARK. The shell of the species, which I here consider as *inusitatus*, somewhat differs from that illustrated by Zilch (1960: 494, Abb. 1740) and its anatomy differs from that described and figured by Breure & Eskens (1981: 75-76, figs. 245-246). I have no sufficient material to resolve this problem, therefore I remain this task for subsequent researchers.

*Moricandia* Pilsbry et Vanatta, 1898  
Fig. 395

Pilsbry & Vanatta in Pilsbry, 1898b: 57.

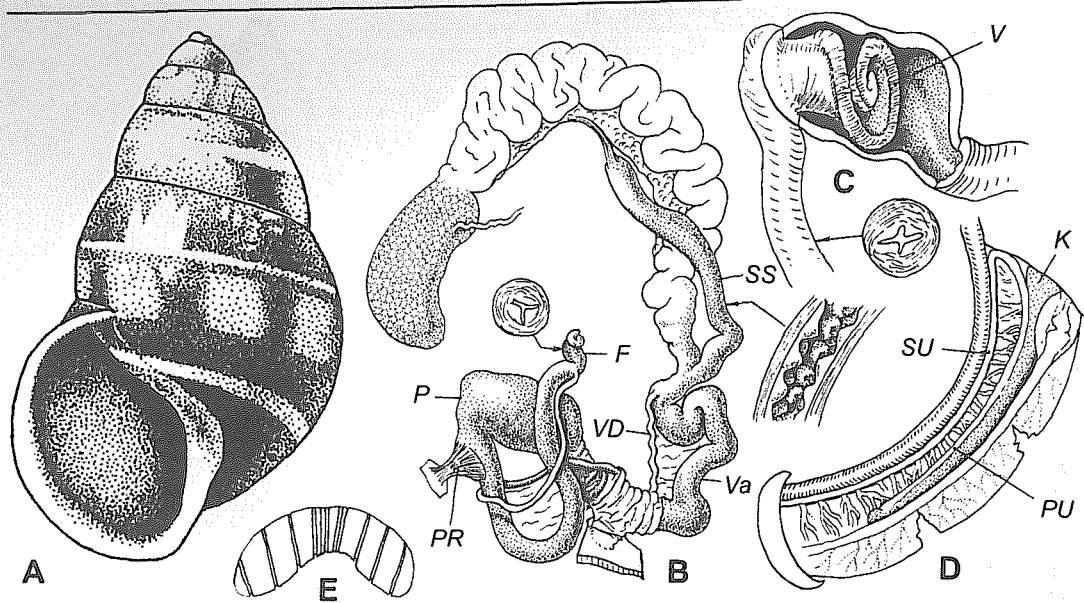


Fig. 394. ? *Drymaeus (Mesembrinus) inusitatus* (Fulton, 1900). Costa Rica. A — shell. B — reproductive tract. C — interior of penis. D — roof of pulmonary cavity. E — jaw. Moscow No. Lc-19616 (dry shells) and Lc-19624 (alcohol).

TYPE SPECIES — *Bulimus dubiosus* Jay, 1839 (= *Helix fusiformis* Rang, 1831); OD.

Shell slender, subfusiform, moderately solid, of 7-9 slightly convex whorls. Last whorl straight. Coloration of greyish-yellow background and irregular, brown-reddish, radial streaks; circular dark zone may be present behind aperture. Embryonic sculpture fine, reticulate; postnuclear whorls weakly sculptured with radial wrinklets and microscopical spiral striae. Aperture narrowly ovate, with basal groove, almost vertical, with moderately reflexed, somewhat thickened margins. Umbilicus narrow, slit-like, semicovered. Height 26-50, diam. 6-14 mm (41.1 × 11.0 mm).

Jaw composed of thin, narrow, slightly converging plates.

Vas deferens adheres to free oviduct down to atrium, then passes under penial sheath and enters penis at base of short, blunt flagellum. Penial sheath very short, penial retractor attached to flagellum terminally. Free oviduct of moderate length, vagina extremely short. Spermathecal shaft enormously long and stout, somewhat convoluted, reservoir capacious.

DISTRIBUTION. Brazil, São Paulo to Pernambuco. 3 or 4 spp.

REMARK. This taxon is usually placed in Odontostominae (Breure, 1974) despite the absence of apertural teeth. Since Bilimulinae and Odontostominae (*Bulimulini* and *Odontostomini*) differ from each other mainly by the presence/absence of apertural teeth, I do not see reasons to assign *Moricandia* to Odontostomini.

*Hyperaulax* Pilsbry, 1897  
Fig. 396

Pilsbry, 1897 (1897-1898): 82 (*Bulimulus* sect.).

TYPE SPECIES — *Bulimus ridleyi* E. Smith, 1890; OD.

Shell conic-ovate, solid, glossy, of 5.5 slightly convex whorls; last a little descending and then slightly ascending in front, distinctly constricted behind aperture. Apex obtuse. Color brown, with buff, variously developed peripheral band; aperture fleshy-brown inside. Embryonic whorls finely and chaotically pitted, later whorls with irregular gentle wrinkles and delicate spiral striae. Aperture ovate, a little oblique, margins flatly reflexed throughout. Parietal wall usually with angular tubercle.

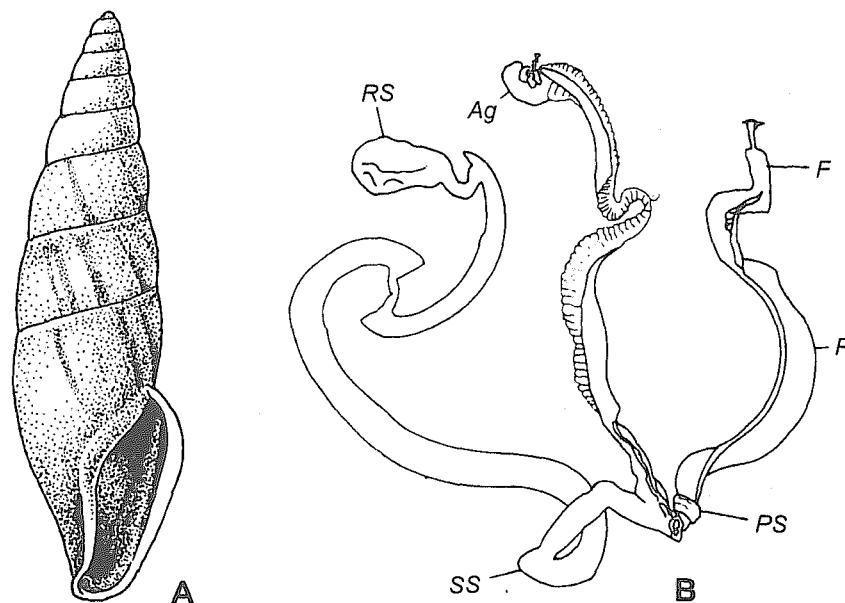


Fig. 395. A — *Moricandia fusiformis* (Rang, 1831). Shell: Brazil. Senck. No. 25353 (as *dubiosa*). B — ! *Moricandia angulata* (J. Wagner, 1827). R — reproductive tract. After Oliveira, 1978.

Umbilicus round, comparatively broad. Height 10.5-12.5, diam. 6.2-7.2 mm (12.0 × 6.2 mm).

DISTRIBUTION. Fernando Noronha Island [off E Brazil]. 1 sp.

REMARK. The situation with this genus is the same as in *Moricandia*.

*Sphaeroconcha* Breure, 1978  
Fig. 397

Breure, 1978: 153.

TYPE SPECIES — *Bulimulus (Bulimulus) araozi* Weyrauch, 1956; OD.

Shell globose, thin, rather shining, of about 4 very convex whorls. Color uniformly brown. Embryonic whorls pit-reticulated, postembryonic surface with very fine periostracal spiral lamellae. Aperture subcircular, relatively large, with slightly thickened and simple margins. Umbilicus in form of narrow slit. Height 6.3-7.2, diam. 5.7-6.3 mm (7.2 × 6.3 mm).

Penis long, subcylindrical, somewhat twisted, with rather non-differentiated lumen, without parallel chambers. Penis sheath absent.

DISTRIBUTION. Peru. 1 sp.

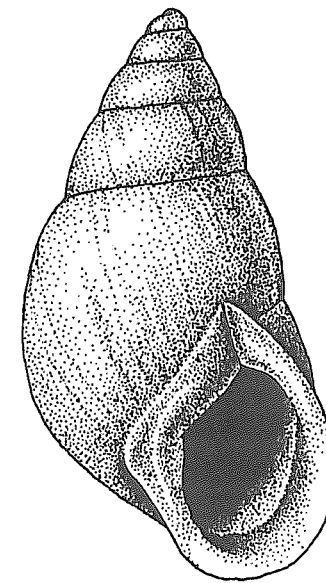


Fig. 396. *Hyperaulax ridleyi* (E. Smith, 1890). Fernando Noronha Island [off E Brazil]. Phil. No. 100530.

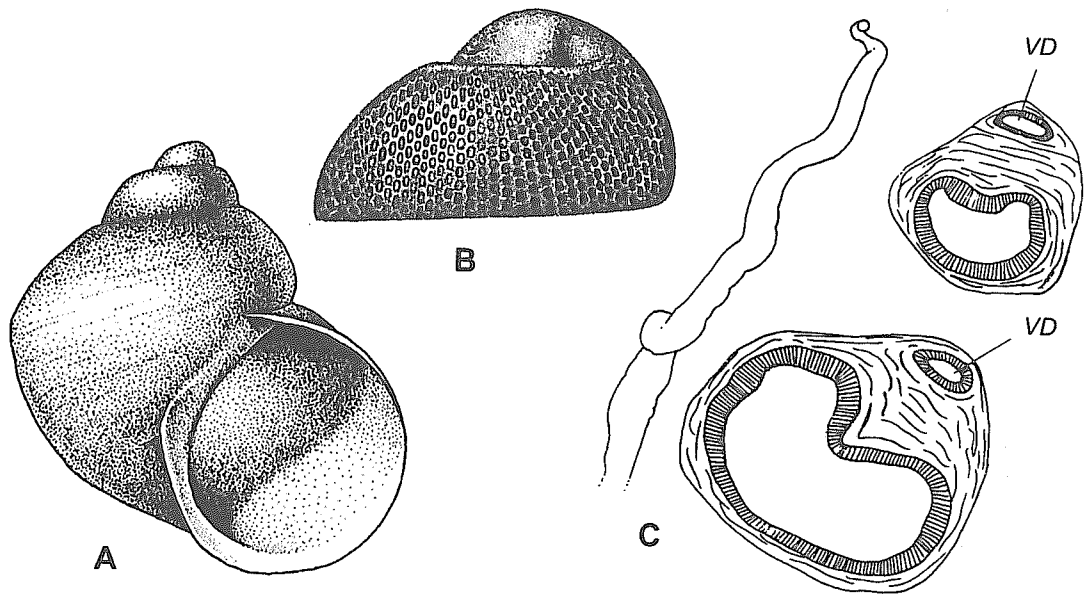


Fig. 397. *Sphaeroconcha araozi* (Weyrauch, 1956).  
A — shell: 5.5 km N & 2.0 km NE Tingo Maria, Dept. Huánuco, Peru. Leiden. B — embryonic sculpture. C — penis and cross-sections. After Breure, 1978.

? *Graptostracus* Pilsbry, 1939  
Fig. 398

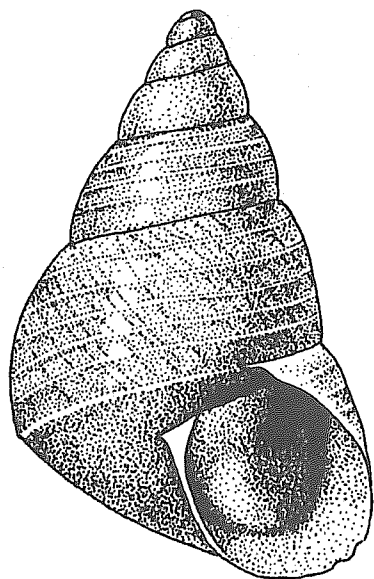


Fig. 398. *Graptostracus webberi* Pilsbry, 1939.  
Near Baños, Ecuador. Holotype (subadult specimen?). Phil. No. 174057.

Pilsbry, 1939b: 29 (*Leiostracus* subg.).

TYPE SPECIES — *Leiostracus* (*Graptostracus*) *webberi* Pilsbry, 1939; OD.

Shell pyramidal, thin, fragile, translucent, glossy, of about 6.5 moderately convex whorls. Last whorl with weak thread-like peripheral angle. Color whitish, with about 6 narrow white opaque spiral bands and weak, pale-brown, radial streaks. Embryonic whorls with fine crowded spiral treadlets; similar sculpture on postnuclear whorls; microscopic spiral lines appear in interspaces between threads on 3rd whorl. Aperture rounded, strongly oblique, with thin, simple margins; columellar margin triangularly dilated above. Umbilicus, a narrow perforation. Holotype: height 22.0, diam. 14.2 mm.

DISTRIBUTION. Ecuador, foothills of the Andes. 1 sp.

REMARK. Breure (1979: 127) states that this taxon "is a non-bulimulid", but does not present any arguments. I was unable

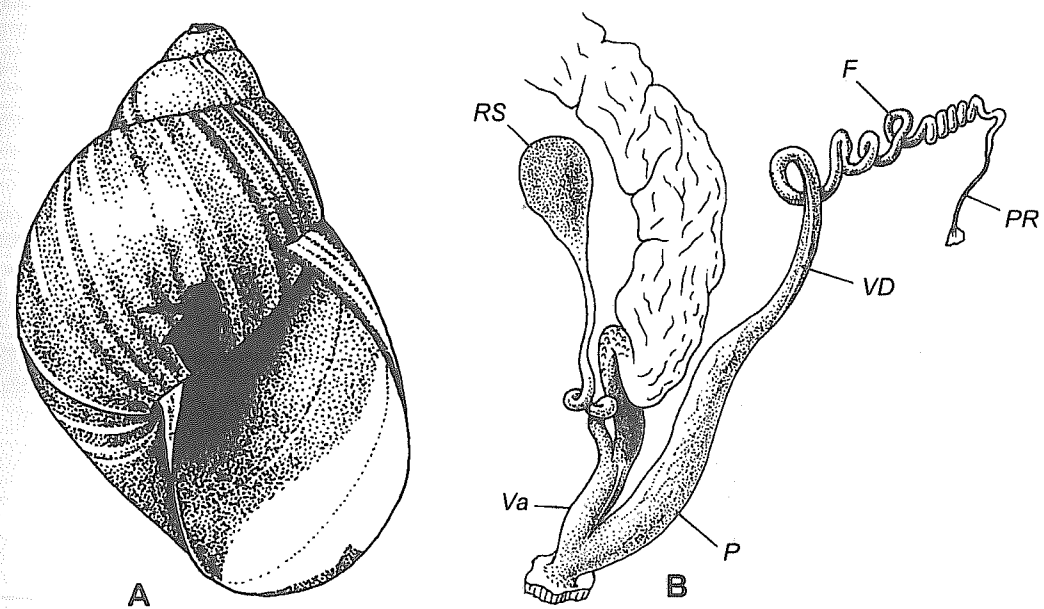


Fig. 399. *Bothriembryon* (*Tasmanembryon*) *tasmanicus* (L. Pfeiffer, 1853).  
Oyster Bay, Tasmania. A — shell. B — reproductive tract. London.

to find any data on the anatomy of *Graptostracus webberi*.

*Bothriembryon* Pilsbry, 1894

Pilsbry, 1894: 36 (nom. nov. pro *Liparus* Martens in Albers, 1860).

— *Liparus* Martens in Albers, 1860: 229 [nom. praeocc., non Albers, 1850, nec Olivier, 1807 (Coleoptera); *Buliminus* subg.; t.-sp. *Bulimus inflatus* Lamarck, 1822; OD].

TYPE SPECIES — *Helix melo* Quoy et Gaimard, 1832; OD.

Shell ovate to oblong-conic, rather solid to thin, of 5-6 variously convex whorls. Color whitish to brownish, usually with darker radial streaks, sometimes with spiral bands. Embryonic whorls very closely pitted, reticulated or with radial wrinkles. Postnuclear whorls with uneven radial wrinkles being stronger below suture and often crossed by spiral fine grooves of variable strength. Aperture ovate, with thin and simple margins. Umbilicus, a short slit, or absent.

Penis sheath absent.

DISTRIBUTION. Australia and Tasmania.

*Bothriembryon* (*Tasmanembryon*)  
Iredale, 1933)  
Fig. 399

Iredale, 1933: 41. Breure, 1979: 95.

TYPE SPECIES — *Bulimus tasmanicus* L. Pfeiffer, 1853; OD.

Shell elongated-ovate, thin, of about 5 moderately convex whorls. Color whitish with yellowish to brownish radial streaks, upper whorls pink-brown. Embryonic sculpture of oblique wrinkles, more or less anastomosing and crossed by weaker spiral lines. Postembryonic surface finely radially wrinkled. Aperture broadly ovate. Umbilicus closed. Height 23-30 diam. 15-20 mm (23.0 × 15.0 mm).

Vas deferens tightly adheres to vagina and penis. Flagellum very long, highly convoluted. Penis internally with high, narrow, sharp, longitudinal folds. Penis sheath absent. Free oviduct practically absent. Vagina not long. Spermathecal stalk comparatively short, rather slender; reservoir voluminous.

DISTRIBUTION. E coast of Tasmania and Maria Island. 3 spp.



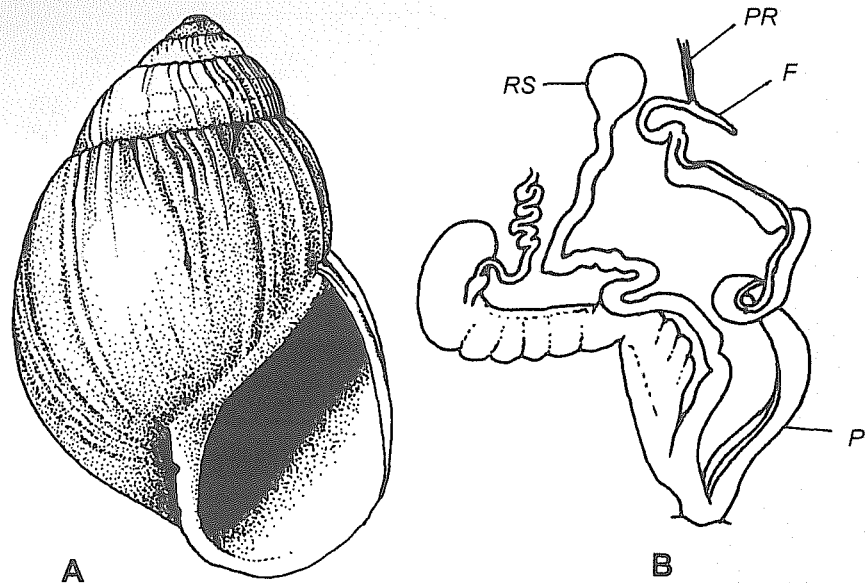


Fig. 400. A — *Bothriembryon (Bothriembryon) melo* (Quoy et Gaimard, 1832). "New Holland". Lectotype. Paris.  
B — ! *Bothriembryon (Bothriembryon) inflatus* (Lamarck, 1822). Reproductive tract. After Pilsbry, 1946a.

*Bothriembryon (Bothriembryon s. str.)*  
Fig. 400

- *Hartogembryon* Iredale, 1933: 41 (t.-sp. *Bulimus onslowi* Cox, 1864; OD).
- *Larapintembryon* Iredale, 1933: 41 (t.-sp. *Liparus spenceri* Tate, 1894; OD).
- *Satagembryon* Iredale, 1933: 41 [t.-sp. *Buliminus (Liparus) gratwicki* Cox, 1899; OD].
- *Dialembryon* Iredale, 1939: 16 (t.-sp. *Bulimus indutus* Menke, 1843; OD).
- *Ponembryon* Iredale, 1939: 16 (t.-sp. *Bulimus dux* L. Pfeiffer, 1861; OD).
- *Telebryon* Iredale, 1939: 16 (t.-sp. *Bulimus kingii* Gray, 1825; OD).
- *Celatembryon* Iredale, 1939: 36 (t.-sp. *Bothriembryon distinctus* Iredale, 1939; OD).

Breure, 1979: 91.

Shell elongated-ovate to oblong-conic, rather solid, of 5-6 rather convex whorls. Color variable, with shades of yellow, brown, red, lilac or white, often with patterns of irregular radial streaks and, rather rarely, spiral bands. Embryonic whorls pit-reticulate or with anastomosing wrinkles.

Aperture subovate, with simple margins. Umbilicus closed or represented by narrow slit. Height 18-30, diam. 10-17 mm (21.0 × 12.5 mm).

Kidney narrowly triangular, curved; secondary ureter completely closed. Main pulmonary vein prominent, side vessels strong; two veins parallel to main vein.

Flagellum slender, with apically attached retractor; flagellum about half of penis + epiphallus length. Penis sometimes swollen basally but always slender and long, passing gradually into epiphallus. Penis sheath absent. Spermathecal stalk as long as spermooviduct, slender; reservoir more or less globose.

DISTRIBUTION. Australian mainland. About 60 spp.

*Simpulopsini Schileyko, trib. nov.*

Aperture without teeth.

Penis sheath absent. Basal portion of spermathecal stalk enlarged, with more or less developed process.

DISTRIBUTION. Central and S America, West Indies.

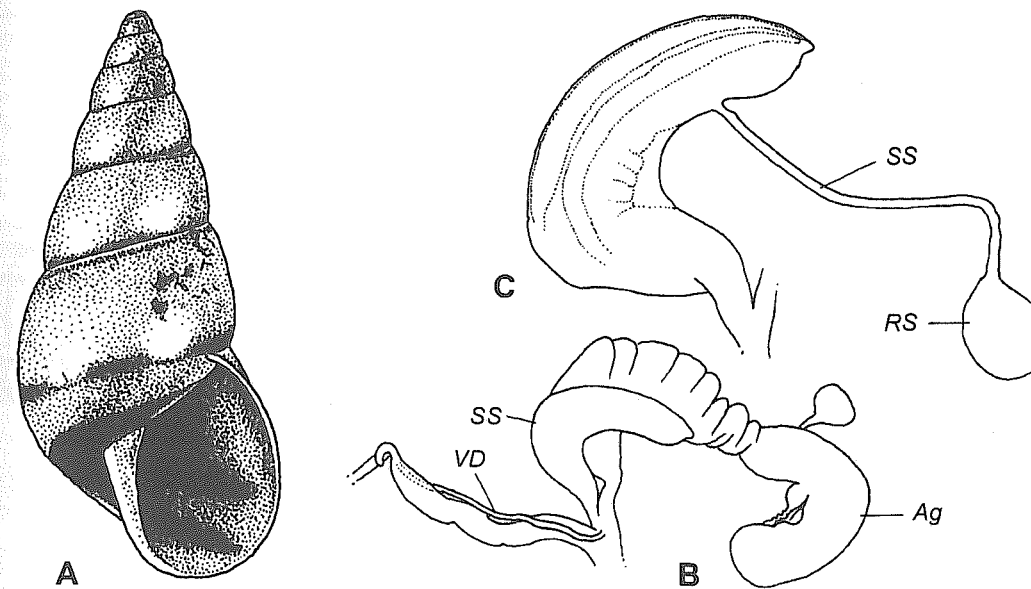


Fig. 401. *Leiostracus (Leiostracus) vittatus* (Spix, 1827).  
A — shell: Pernambuco, Brazil. Phil. No. 25956.  
B, C — ! *Leiostracus (Leiostracus) cinnamomeolineatus* (Moricand, 1841). B — reproductive tract. C — spermatheca. After Breure, 1978.

*Leiostracus* Albers, 1850

Albers, 1850: 156.

— *Liostracus* Mörch, 1852: 26 (nom. err. pro *Leiostracus* Albers, 1850).

Breure, 1979: 125.

TYPE SPECIES — *Bulimus vittatus* Spix, 1827; SD Martens in Albers, 1860.

Shell ovate-conic, thin to moderately thin, of 6-7 nearly flat to rather convex whorls; last whorl sometimes more or less angled or keeled. Color whitish to yellowish, monochromatic or with radial streaks and/or spiral brownish bands. Embryonic whorls with radial wrinkles and/or fine spiral lines. Postnuclear surface practically smooth or with periostracal spiral striae. Aperture oblique, more or less ovate, with narrowly expanded margins. Umbilicus dot- or slit-like.

Flagellum rather short, blunt. Penis sheath absent. Spermathecal duct of two parts: enlarged basal, furnished with process, and slender upper part.

DISTRIBUTION. Guyana, Surinam, Brazil.

*Leiostracus (Leiostracus s.str.)*

Fig. 401

Shell elongated, rather thin, of 6-7 rounded, slightly convex whorls. Last whorl rounded. Color pattern of radial and/or spiral brownish bands; sometimes uniformly light. Embryonic whorls with fine spiral lines, occasionally with some low radial wrinkles on upper part of whorl. Postembryonic surface nearly smooth. Aperture ovate, with simple margins; columellar margin expanded. Umbilicus, a minute perforation. Height 17-33, diam. 6.5-14.5 mm (32.0 × 13.9 mm).

Kidney narrowly triangular; secondary ureter closed. Main pulmonary vein well developed, but not prominent; side veins weakly developed.

Penis more or less cylindrical, passing into epiphallus without external mark. Reservoir of spermatheca rather small, subglobose.

DISTRIBUTION. Guyana, Surinam, Brazil (Bahia, Espiritu Santo). 35 spp. & subspp.

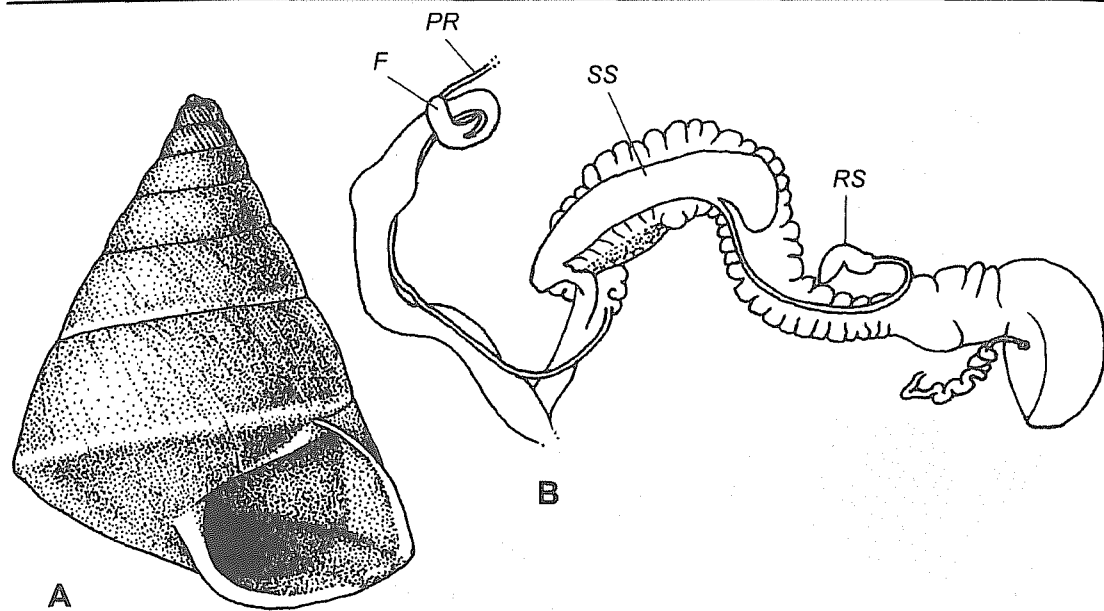


Fig. 402. *Leiostracus (Pseudoxychona) spiritualis* (Ihering, 1912).  
A — shell: Espiritu Santo, Brazil. Syntype. Phil. No. 106818. B — reproductive tract. After Breure, 1979.

*Leiostracus (Pseudoxychona)*  
Pilsbry, 1930)  
Fig. 402

Pilsbry, 1930b: 356 (*Bulimulus* sect.).

TYPE SPECIES — *Oxychona spiritualis* Ihering, 1912; OD.

Shell rather thin, sharply angled or even keeled. Color yellowish to brownish, uniform or with darker spiral band(s). Embryonic sculpture of spiral lines and radial riblets, latter stronger. Postembryonic whorls covered with periostracal spiral striae. Aperture oblique, truncated-ovate, with hardly to narrowly expanded margins. Height 16.5-25.0, diam. 12.5-18.0 mm (16.7 × 12.8 mm).

Kidney narrowly triangular; secondary ureter closed. Main pulmonary vein moderately, side vessels weakly to moderately developed.

Penis more or less cylindrical, slightly swollen at junction with epiphallus. Vagina rather long. Reservoir of spermatheca elongated-ovate.

DISTRIBUTION. Brazil. 4 spp.

*Rhinus* Martens, 1860  
Fig. 403

Martens in Albers, 1860: 223 (*Bulimulus* subg.).  
Breure, 1979: 130.

TYPE SPECIES — *Helix (Cochlogena) heterotricha* Moricand, 1836; OD.

Shell ovate to globose, rather thin to solid, of 6-7 slightly convex whorls. Color brownish to ebony, uniform or with lighter peripheral band. Apical sculpture of radial waved or zigzagged wrinkles. Postnuclear whorls weakly sculptured with fine irregular radial striae and spiral series of short to rather long hairs. Aperture generally ovate, with expanded and usually narrowly reflexed margins. Umbilicus, a minute slit, or perforation. Height 7-41, diam. 4-23 mm (34.5 × 21.5 mm).

Kidney triangular, slightly curved; secondary ureter completely closed. Main pulmonary vein rather prominent, side vessels weak.

Flagellum very short, conic. Epiphallus subcylindrical, slightly swollen towards base of flagellum. Penis club-shaped. Free oviduct and vagina very short. Basal part

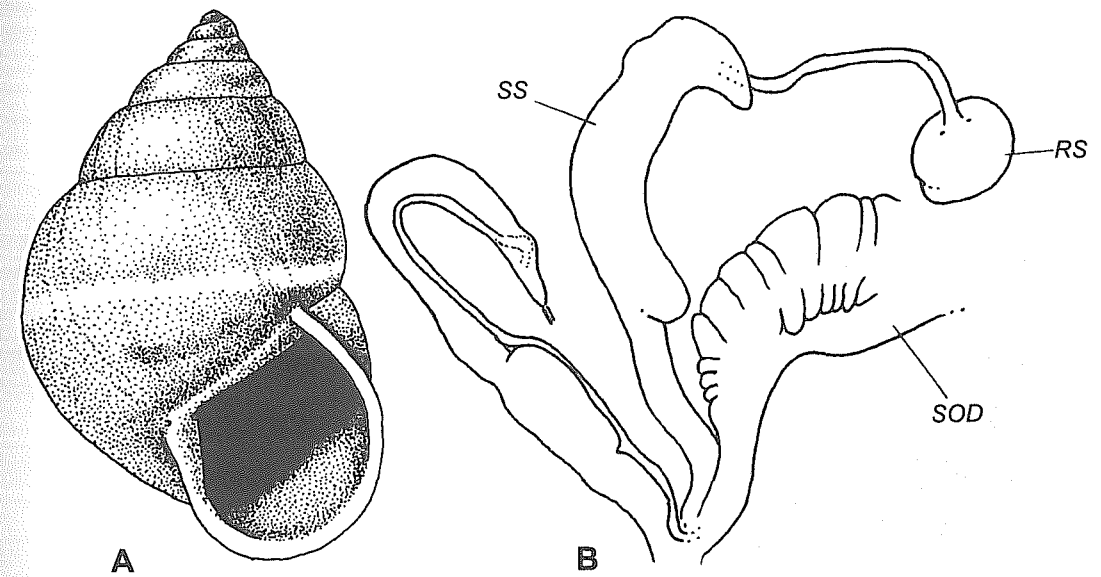


Fig. 403. A — *Rhinus heterotrichus* (Moricand, 1836).  
Shell: Brazil. Phil. No. 25655.  
B — ! *Rhinus ciliatus* (Gould, 1846). Reproductive tract. After Breure, 1978.

of spermathecal shaft half as broad as median portion, which bears process; upper portion of shaft narrow. Reservoir ovate to globose.

DISTRIBUTION. Venezuela, Brazil, ?Argentina. 22 or 23 spp.

*Simpulopsis* Beck, 1837

Beck, 1837: 100 (*Succinea* subg.).

— *Simulopsis* Gray, 1847: 171 (nom. err. pro *Simpulopsis* Beck, 1837).

— *Sympulopsis* Ancy, 1881: 484 (nom. err. pro *Simpulopsis* Beck, 1837).

Breure, 1979: 131.

TYPE SPECIES — *Helix (Cochlohydra) sulculosa* Féussac, 1821; SD Martens in Albers, 1860.

Shell elongated-ovate to vitrinoid, globose, thin, translucent, of 3-4.5 slightly to moderately convex whorls. Color uniformly yellowish, greenish or brown. Apical sculpture of fine spiral lines that more or less cut the low, oblique riblets or wrinkles into granules. Postembryonic surface nearly

smooth to corrugate. Aperture generally oblique, ovate, with thin and simple margins. Umbilicus absent.

Flagellum short, tapering or subcylindrical, epiphallus slender. Penis more or less swollen; penis sheath absent or vestigial. Middle portion of spermathecal stalk much enlarged, sometimes folded; upper part slender, cylindrical. Reservoir small, globose to ovate.

DISTRIBUTION. Central and S America, West Indies.

*Simpulopsis (Eudiotus)* Martens, 1860  
Fig. 404

Martens in Albers, 1860: 223 (*Bulimulus* subg.).

— *Bulimulopsis* Pilsbry, 1899: 220 (pro sect.; nom. nov. pro *Eudiotus* Martens, 1860, non *Eudiotis* Hübner, 1816; t.-sp. *Helix pseudosuccinea* Moricand, 1836; OD).

— *Bulimulopsis* Parodiz, 1944b: 6 (nom. err. pro *Bulimulopsis* Pilsbry, 1899).

— *Pseudoglandina* Weyrauch, 1967b: 485 (t.-sp. *Pseudoglandina agitata* Weyrauch, 1967; monotypy).

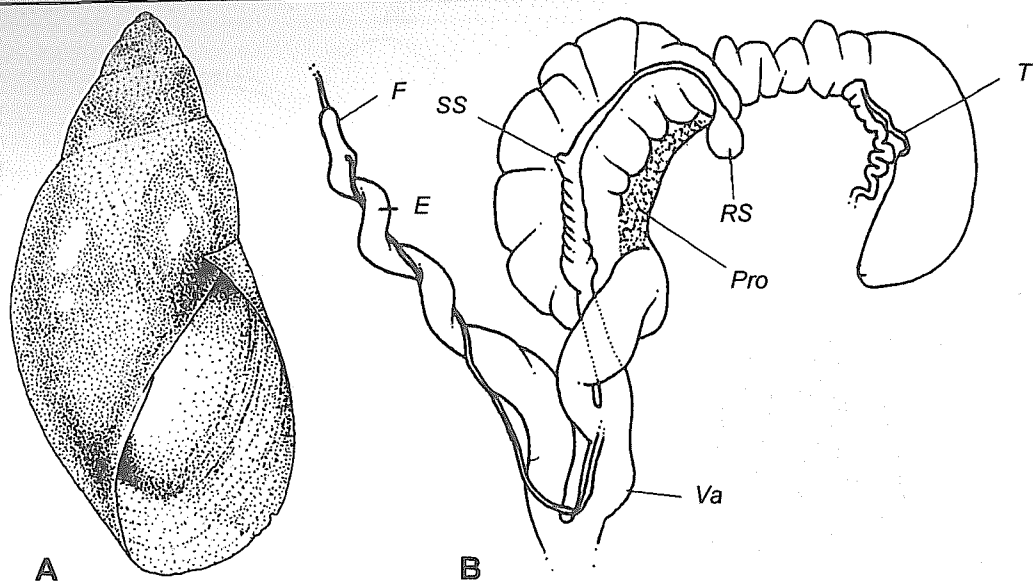


Fig. 404. A — *Simpulopsis (Eudioptus) pseudosuccinea* (Moricand, 1836). Shell: Bahia, Brazil. Syntype. Paris. B — ! *Simpulopsis (Eudioptus) citrinovitrea* (Moricand, 1836). Reproductive tract. After Breure, 1978.

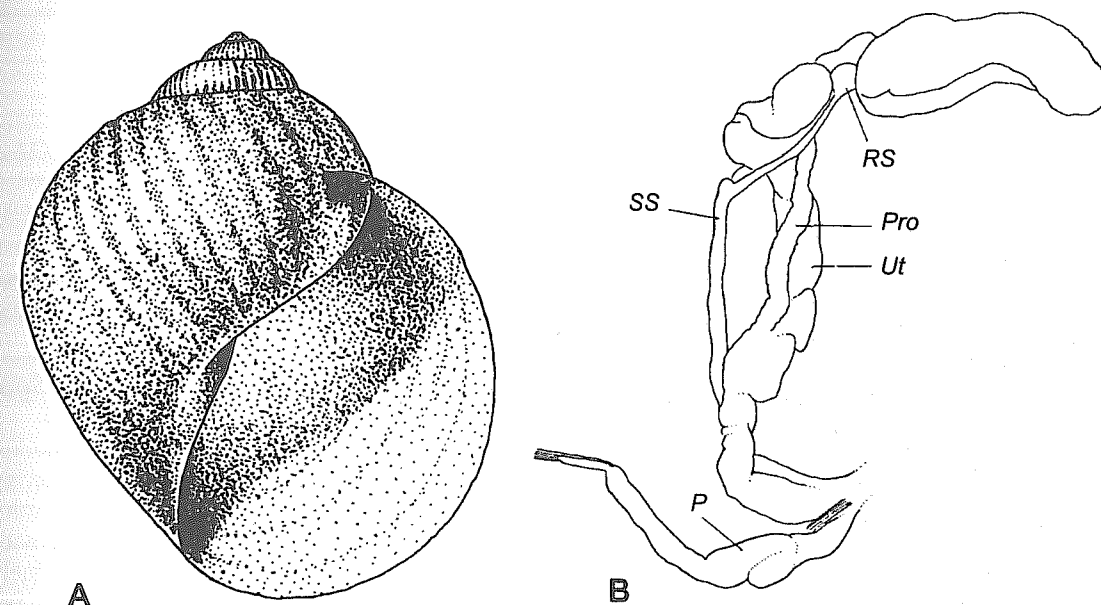


Fig. 405. *Simpulopsis (Simpulopsis) sulculosa* (Férussac, 1821). A — shell: Rio de Janeiro, Brazil. Syntype. Paris. B — reproductive tract. After Breure, 1975.

— *Paracochlea* Hylton Scott, 1967: 89 [*Bulimulus* subg.; t.-sp. *Bulimulus (Paracochlea) willineri* Hylton Scott, 1967; OD].

Breure, 1979: 134.

TYPE SPECIES — *Helix pseudosuccinea* Moricand, 1836; OD.

Shell more or less succinoid, elongated-ovate, fragile, transparent, glass-like, shining, of about 5 whorls. Last whorl straight. Color pale-ivory or absent. Apical sculpture of fine but distinct regular spiral striation, postembryonic whorls nearly smooth. Aperture elongated-ovate, pointed above, with simple margins. Height 7-24, diam. 3.5-10.0 mm (21.2 × 9.6 mm).

Jaw of many narrow, only slightly convergent plaits.

Talon long, slender, vermiform. Flagellum subcylindrical, with rounded tip. Epiphallus long, coiled around vas deferens, not demarcated externally from penis. Basal portion of spermathecal stalk slightly expanded, middle part somewhat swollen, folded, with short process.

DISTRIBUTION. Brazil, Paraguay, Argentina (Prov. Jujuy), Peru, Ecuador, Colombia. 10 spp.

*Simpulopsis*  
(*Simpulopsis* s. str.)  
Fig. 405

Shell globose, rather fragile. Body whorl much inflated. Color yellowish-green to olive- or pale-brown. Embryonic whorls with closely set, oblique wrinkles crossed by spiral lines. Postapical surface more or less corrugated, sometimes with dull and lustreless bands about as broad as glossy intervals. Aperture very large, with thin, simple margins. Columellar margin with very weak lamella. Height 9-25, diam. 7-18 mm (12.2 × 9.0 mm).

Flagellum slender, subcylindrical. Epiphallus not long, demarcated from penis by narrowing. Penis ovate, with indistinct process near base. Vagina very short. Spermathecal shaft somewhat expanded basally, with short process above middle. Reservoir small, globular.

DISTRIBUTION. Mexico, Guatemala, Venezuela, Surinam, French Guyana, Brazil, West Indies (St. Vincent, Trinidad). About 20 nominal spp. & subspp.

**Odontostomini**  
Pilsbry et Vanatta, 1898

Pilsbry & Vanatta, 1898: 283 (pro subf.).

— Tomogeridae Jousseume, 1877: 311 (based on *Tomogerus* Blainville, 1824 = *Anostoma* Fischer von Waldheim, 1807).

Aperture with teeth.

Penis sheath present. Spermathecal stalk long, without blind process.

DISTRIBUTION. S America: east of the Andes and south of the Amazon; southernmost limit in Buenos Aires Prov., Argentina.

*Burringtonia* Parodiz, 1944  
Fig. 406

Parodiz, 1944a: 4 [nom. nov. pro *Odontostomus* Pilsbry, 1901, non Beck, 1837; t.-sp. *Helix (Cochlodina) pantagruelina* Moricand, 1833; OD].

— *Pantagruelina* Forcart, 1946: 58 [nom. nov. pro *Odontostomus* Pilsbry, 1901 non Beck, 1837; t.-sp. *Helix (Cochlodina) pantagruelina* Moricand, 1833; OD].

TYPE SPECIES — *Helix (Cochlodina) pan-*

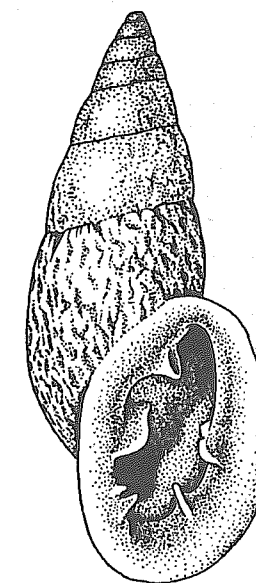


Fig. 406. *Burringtonia labrosa* (Menke, 1828). Bahia Prov., Brazil. Moscow No. Lc-23327.

*tagruelina* Moricand, 1833 (= *Scarabus labrosus* Menke, 1828); OD.

Shell high, subfusiform-conic, quite solid, opaque, of about 8 slightly convex whorls. Last whorls ascending because of reflection of aperture margin. Color corneous, sometimes with violet tint, positive elements of sculpture lighter; violet circular zone behind aperture. Embryonic whorls finely reticulate, later whorls covered with rather coarse vermiculate sculpture. Aperture elongated-ovate, vertical, with widely reflexed, expanded margins. Parietal wall with high, oblique lamella; columellar lamella vertical, corrugated; baso-columellar wall bears 1-2 minute teeth; lower palatal tooth sharp; above it situated crest-like corrugated plica similar to columellar lamella in shape and standing in aperture plane; upper portion of palatal side often with 3-4 tiny, sharp teeth. Umbilicus, a comparatively broad lateral crack. Height 35-70, diam. 15-27 mm (63.3 × 24.0 mm).

DISTRIBUTION. Brazil (Bahia Prov.). 2-3 spp.

*Cyclodontina* Beck, 1837

Fig. 407

Beck, 1837: 88 (*Pupa* subg.).

TYPE SPECIES — *Clausilia pupoides* Spix, 1827 (= *Pupa inflata* A. Wagner in Spix, 1827); SD Pilsbry, 1898.

Shell elongated-ovate to subfusiform, thin but rather solid, glossy, somewhat translucent, of 8-10 slightly convex whorls. Color white to light-grey, early whorls somewhat darker, usually with radial dark streaks. Embryonic whorls delicately radially costulate, later with fine, irregular, radial wrinklets and wavy spiral striae. Aperture irregularly ovate, only slightly oblique, margins sharp, a little reflexed, with 4-5 teeth. Parietal lamella thin, rather short, columellar spirally ascending, baso-palatal wall with 2 or 3 short plicae; upper sometimes absent. Umbilicus, a narrow lateral crack. Height 18.5-30.5, diam. 6.5-10.0 mm (20.1 × 7.2 mm).

Flagellum subcylindrical, moderately long. Penis sheath very short. Free oviduct markedly longer than vagina. Spermathecal stalk very long, reservoir small, globose.

DISTRIBUTION. Brazil (Bahia Prov.), Paraguay, N Argentina. About 10 spp. & subspp.

*Spixia* Pilsbry et Vanatta, 1898

Fig. 408

Pilsbry & Vanatta in Pilsbry, 1898b: 57.

— *Euodontostomus* Holmberg, 1912: 149 [*Odontostomus* subg.; t.-sp. *Odontostomus* (*Euodontostomus*) *saltensis* Holmberg, 1912 (= *Clausilia striata* Spix, 1827); monotypy].

— *Spixinella* Hylton Scott, 1952: 13 [*Cyclodontina* subg.; t.-sp. *Cyclodontina* (*Spixinella*) *parodizi* Hylton Scott, 1952; OD].

TYPE SPECIES — *Clausilia striata* Spix, 1827; SD Pilsbry, 1901 (1901-1902).

Shell high-conic or subcylindrical, moderately solid, of 9.5-11.5 slightly convex whorls. Last whorl not descending. Color corneous, ivory, or whitish, sometimes with reddish streaks. Embryonic whorls finely regularly striated, then striae gradually becoming obsolete, 1-2 last whorls practically smooth; sometimes postnuclear whorls coarsely radially ribbed. Aperture irregularly ovate, moderately oblique, with reflexed margins. Parietal lamella short, columellar lamella very oblique, long, entering. Basal tooth tubercular, palatal short, triangular. Sides of plicae often reddish-brown, otherwise aperture white inside. Umbilicus, a minute perforation, surrounded by well developed spiral grooves. Height 17-40, diam. 3.6-14.0 mm (29.5 × 10.1 mm).

Plates of jaw only slightly converging.

Vas deferens adherent to penis but not to epiphallus, entering laterally. Flagellum rather long, slender. Epiphallus comparatively very long, convoluted. Penial sheath absent. Penial retractor arising on diaphragm and soon becoming splitted into two arms — very short, attaching subterminally to flagellum, and much longer, slender arm inserting onto vas deferens before its entering. Free oviduct short, vagina rather long, convoluted, expanded. Spermathecal stalk long, enlarged basally, reservoir of irregular shape.

DISTRIBUTION. Argentina, S Brazil. 1 or 2 spp.

*Clessinia* Döring, 1874

Fig. 409

Döring, 1874: 201.

TYPE SPECIES — *Clessinia stelzneri* Döring, 1874; monotypy.

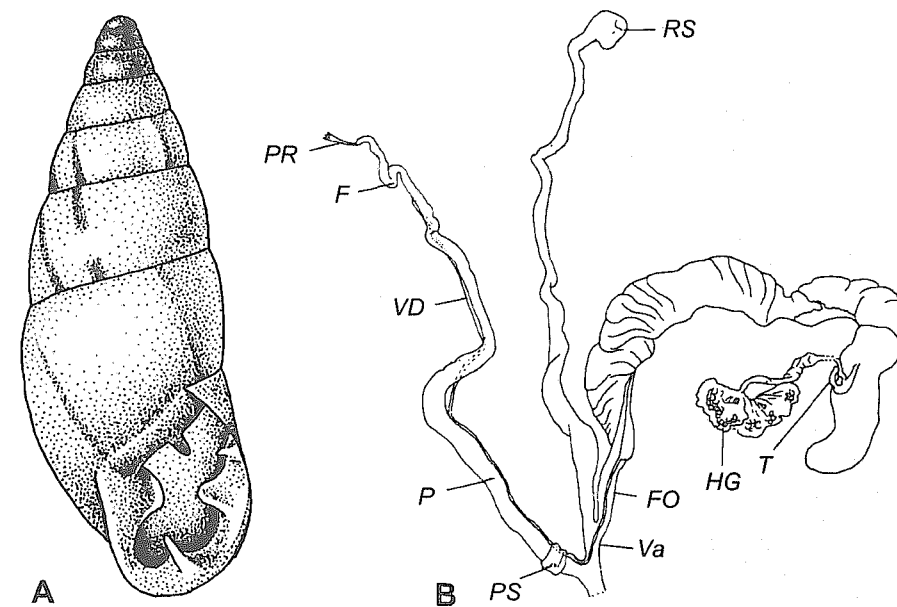


Fig. 407. *Cyclodontina inflata* (A. Wagner, 1827). A — shell: Hills near Golf links la Cumbre, Cordoba, Argentina. Moscow No. Lc-23332 (Phil.). B — *Cyclodontina tudiculata* (Martens, 1868). Reproductive tract. After Breure & Schouten, 1985.

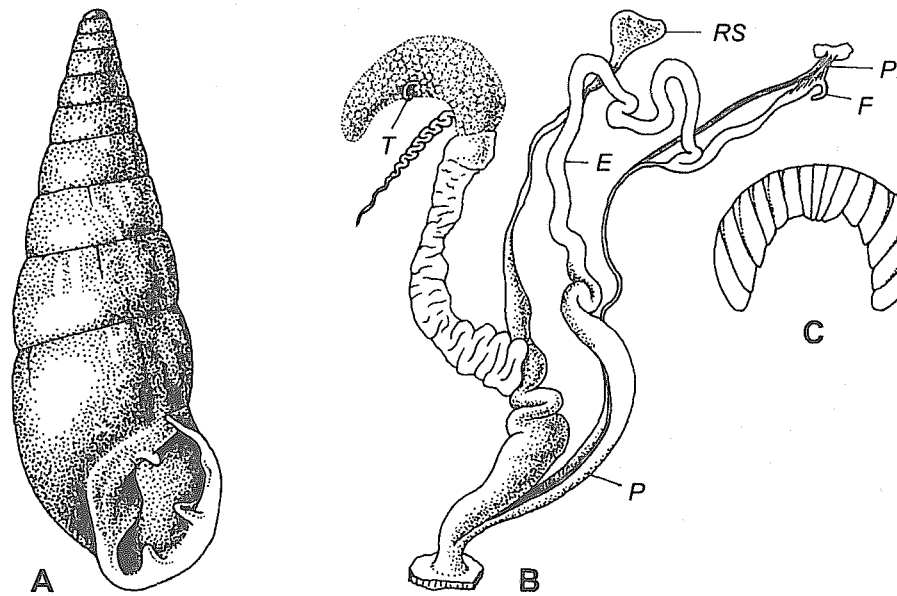


Fig. 408. *Spixia striata* (Spix, 1827). A — shell: Brazil. Leiden. B — reproductive tract. C — jaw. Cerro Colorado, Prov. Saita, Argentina, September 1962. Paris.



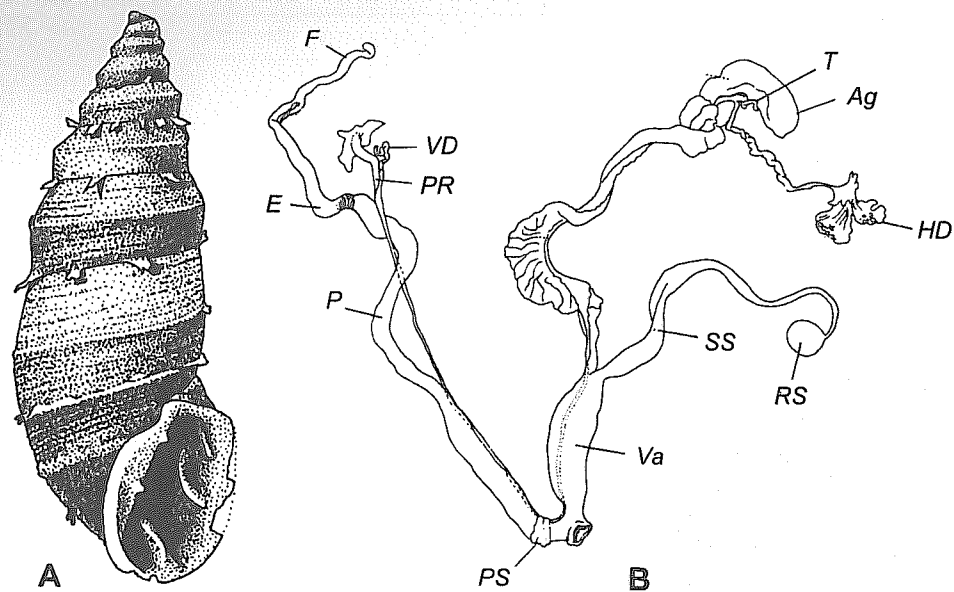


Fig. 409. A — ! *Clessinia pagoda* Hylton Scott, 1967. Rio Quilpo, Sierra San Marcos, Prov. Cordoba, Argentina. Leiden.  
B — *Clessinia cordovana stelzneri* (Döring, 1874). Reproductive tract. After Breure & Schouten, 1985.

Shell high, turreted, rather thin, of 7-8 whorls; upper angulated peripherally. Color corneous. Embryonic whorls with distinct radial riblets. Later whorls with spiral periostracal, somewhat wavy, well spaced threadlets; 2-3 of them more prominent, decorated with leaf-shaped processes. Radial sculpture very weak to rather strong. Aperture elongated-ovate, with shortly reflexed margins. Parietal and columellar margins form nearly straight line bearing 2 tubercular teeth. Basal and 2 palatal plicae lamelliform; upper palatal shorter. Umbilicus minute. Height 15-23, diam. 4.5-7.5 mm (22.1 × 7.0 mm).

Vas deferens passes under penis sheath and through base of penial retractor. Flagellum moderately long, subcylindrical, slightly tapering. Penis sheath very short. Penial retractor attached to epiphallus below entrance of vas deferens. Free oviduct short, vagina broad, fusiform.

DISTRIBUTION. Argentina. 5 or 6 spp.

*Pilsbrylia* Hylton Scott, 1952  
Fig. 410

Hylton Scott, 1952: 5.

TYPE SPECIES — *Pilsbrylia paradoxa* Hylton Scott, 1952; OD.

Shell elongated-fusiform, thin, of 7.5-8 slightly convex whorls. Last whorl straight. Color light-corneous. Embryonic whorls with delicate radial plicae. Later whorls with weak, gentle radial wrinkles and fine irregular spiral striae. Aperture ovate, slightly oblique, with nearly simple margins. Columellar margin with tubercular tooth; another, larger tooth on palatal side at short distance from aperture edge. Umbilicus, a narrow slit. Height 15.0-17.5, diam. 4.7-5.0 mm (16.0 × 4.8 mm).

Plates of jaw not convergent, thin.

Talon, a light curvature of hermaphroditic gland. Vas deferens adherent, entering epiphallus laterally. Flagellum short, slender. Penial retractor attachment marks boundary between penis and epiphallus. Free oviduct and vagina short. Spermathecal stalk a little convoluted, reservoir small.

DISTRIBUTION. N Argentina. 1 sp.

*Bahiensis* Jousseume, 1877  
Fig. 411

Jousseume, 1877: 311.

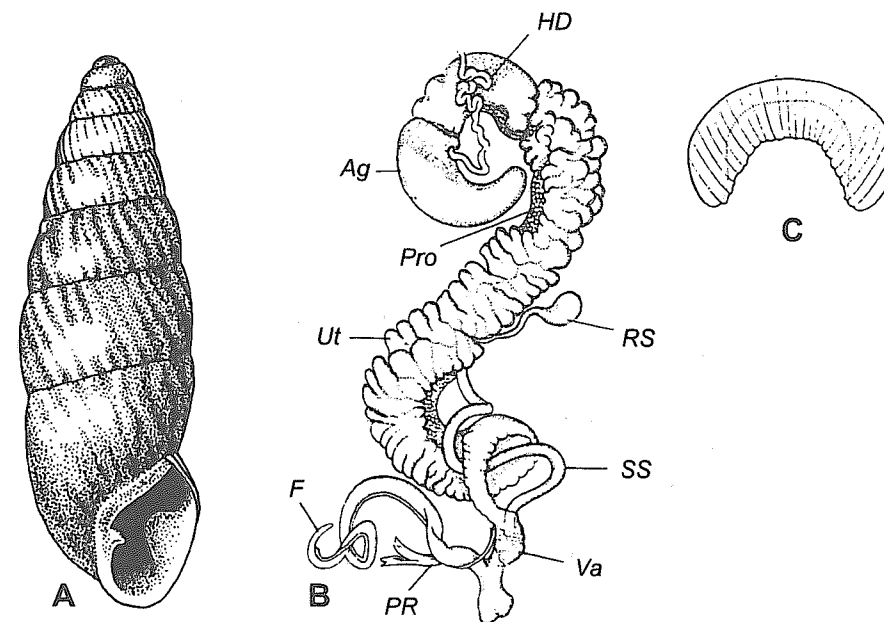


Fig. 410. *Pilsbrylia paradoxa* Hylton Scott, 1952.  
A — shell: Camino de cornisa, between Salta and Jujuy, km 1648, Prov. Salta, Argentina. Chicago No. 217033. B — reproductive tract. C — jaw. After Hylton Scott, 1952.

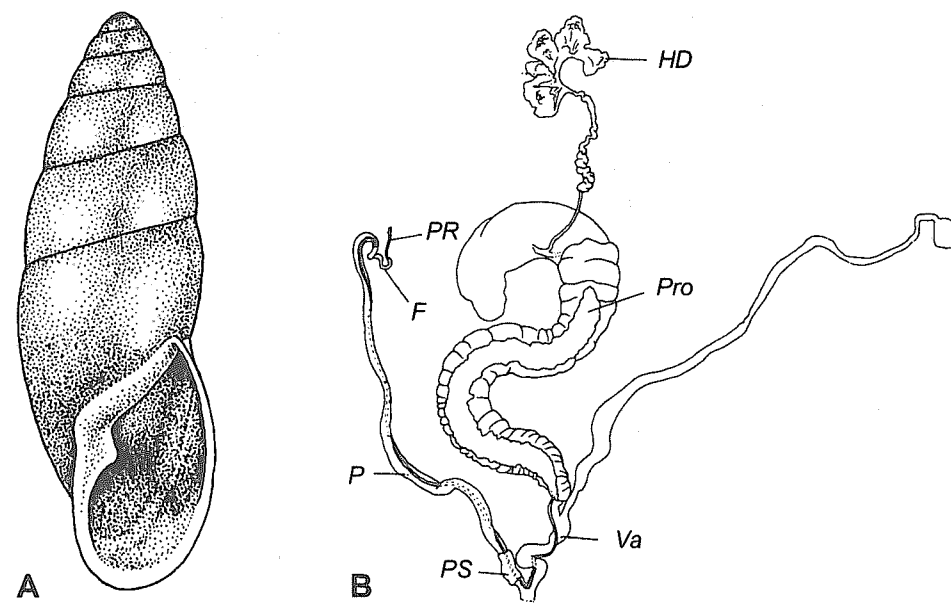


Fig. 411. A — *Bahiensis bahiensis* (Moricand, 1833). Prov. Bahia, Brazil. Syntype. Phil. No. 3364.  
B — ! *Bahiensis rhodinostoma* (d'Orbigny, 1835). Reproductive tract. After Breure & Schouten, 1985.

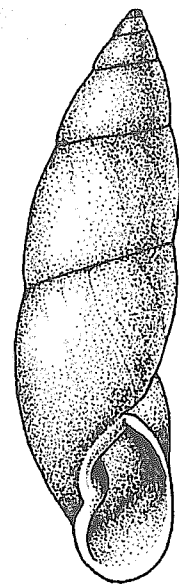


Fig. 412. *Macrodontopsis simplex* (Thiele, 1906).  
Serra dos Tapes, St. Rio Grande do Sul, Brazil. "Typus". Berlin No. 55781. After Zilch, 1960.

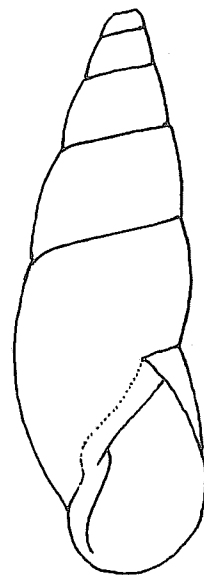


Fig. 413. *Ventania avellanadae* (Döring, 1881).  
After Parodiz, 1940.

TYPE SPECIES — *Helix (Cochlogena) bahiensis* Moricand, 1833; OD.

Shell fusiform, thin, somewhat translucent, shining, of 7-11 slightly convex whorls. Color uniformly grey or light-corneous. Embryonic whorls very finely but distinctly reticulate, later with delicate irregular wrinkles and accurate, crowded, wavy, microscopic, spiral striation. Aperture elongated-ovate, nearly vertical, with sharp, shortly reflexed margins; columellar and palatal margins more or less parallel. Columellar margin with variously developed lamella; opposite to it similar tooth-like palatal swelling may be present. Umbilicus, a narrow lateral slit. Height 17-32, diam. 5.5-10.0 mm (17.8 × 5.5 mm).

Flagellum very short, slender. Penis sheath short. Penial retractor inserted terminally. Free oviduct very short, vagina rather long, thin, somewhat convoluted. Spermathecal stalk more or less tapering, reservoir globose.

DISTRIBUTION. S and E Brazil. About 5 spp.

*Macrodontopsis* Thiele, 1931  
Fig. 412

Thiele, 1931: 662 (*Macrodontes* sect.).

TYPE SPECIES — *Macrodontes simplex* Thiele, 1906; monotypy.

Shell fusiform-cylindrical, moderately solid, of about 6 flattened whorls. Last whorl gradually descending in front. Color corneous. Embryonic whorls microscopically spirally striated, subsequent whorls without regular sculpture. Aperture irregularly ovate, with shortly reflexed margins and well-developed parietal callus. Columellar margin with strong, spirally entering lamella. Umbilicus closed. Height 36.0, diam. 10.5 mm.

DISTRIBUTION. S Brazil. 1 sp.

*Ventania* Parodiz, 1940  
Fig. 413

Parodiz, 1940: 229 (*Odontostomus* subg.).

TYPE SPECIES — *Eudiotus avellanadae* Döring, 1881; OD.

Shell conic-fusiform, rather solid, shining, of 7 slightly convex whorls. Color corneous to olivaceous, often with irregular chestnut streaks. Embryonic whorls smooth, subsequent whorls lacking regular sculpture. Aperture semiovate, with moderately reflexed margins; columellar margin

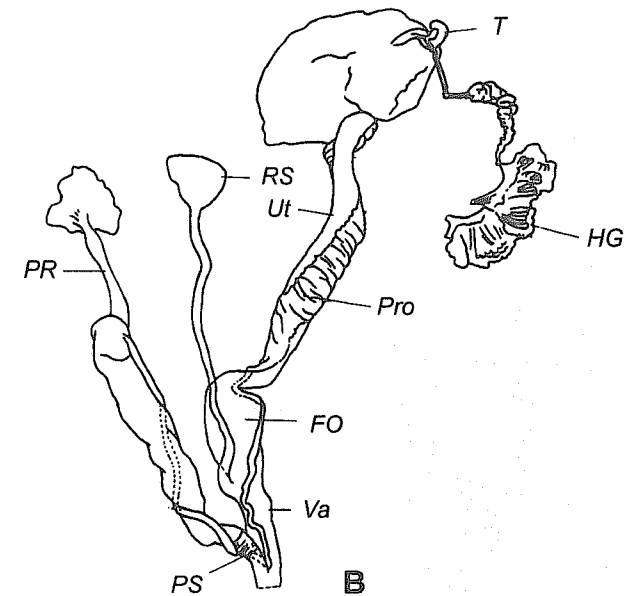
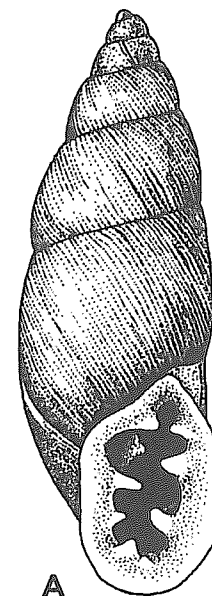


Fig. 414. *Odontostomus gargantua* (Férussac, 1821).  
A — shell: Brazil. Phil. No. 3359.  
B — ! *Odontostomus paulistus* Pilsbry, 1898. Reproductive tract. After Breure & Schouten, 1985.

with subvertical lamella. Umbilicus slit-like. Height 22.5-24.0, diam. 8-9 mm.

DISTRIBUTION. Argentina (Sierra de la Ventana, Sierra de las Tunas, Sierra de Curumalal). 1 sp.

*Odontostomus* Beck, 1837  
Fig. 414

Beck, 1837: 54.

— *Macrodontes* Swainson, 1840: 334 [*Clausilia* subg.; t.-sp. *Macrodontes sowerbeyii* (sic!) Swainson, 1840; monotypy].

— *Odontostoma* Forcart, 1946: 58 (nom. err. pro *Odontostomus* Beck, 1837).

TYPE SPECIES — *Bulimus odontostomus* Sowerby, 1824 [= *Helix (Cochlodina) gargantua* Férussac, 1821]; tautonymy.

Shell elongated-ovate, moderately solid, of 5-6.5 slightly convex whorls. Color whitish to corneous. Embryonic whorls with fine spiral threadlets, later whorls radially rib-striated, with traces of spiral striation. Aperture narrowly ovate, a little oblique, with reflexed margins, obstructed with 7-9 teeth: tubercular parietal, 3 columellar (upper of them lying deeper than other), 1-2

basal, 2-3 palatal. Umbilicus narrowly open. Height 20-40, diam. 6.5-12.0 mm (23.0 × 7.2 mm).

Flagellum broad, exceptionally short, widely rounded, externally not discernible. Penis and epiphallus externally not differentiated, bulky, somewhat narrowed at base. Penis sheath short. Free oviduct swollen, its length of about same length as vagina. Spermathecal shaft subcylindrical, slender, moderately long. Reservoir subglobose.

DISTRIBUTION. S Brazil. About 10 spp. & subspp.

*Scalarinella* Dohrn, 1874  
Fig. 415

Dohrn, 1874: 202.

TYPE SPECIES — *Bulimus cordovana* L. Pfeiffer, 1855; monotypy.

Shell slender, fusiform, moderately thin, of 9-10 rather convex whorls. Color light-corneous, with lighter radial streaks. Embryonic whorls finely ribbed, later whorls with microscopical, spiral, membranaceous lamellae and radial riblets. Aperture free, irregularly subcircular, with well reflexed

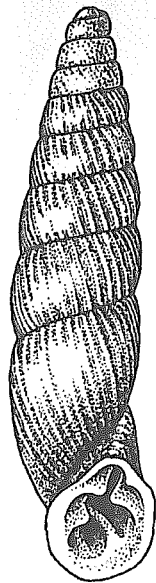


Fig. 415. *Scalarinella cordovana* (L. Pfeiffer, 1855). Argentina. Phil. No. 322836.

margins. Parietal lamella strong but short, triangular; columellar subvertical. Basal plica begins at short distance from aperture edge; lower palatal long, upper palatal short, similar to parietal lamella in shape; minute marginal tubercle above upper palatal plica also present. Umbilicus very narrow. Height 16-23, diam. 4-6 mm (17.0 × 4.2 mm).

DISTRIBUTION. Argentina. 1 sp.

*Plagiodontes* Döring, 1876  
Fig. 416

Döring, 1876: 318.

TYPE SPECIES — *Helix dentata* Wood, 1828; SD Pilsbry, 1898b.

Shell elongated-ovate, pupiform, rather solid, glossy, of about 6.5-8 slightly convex whorls. Color light-grey or light-corneous. Embryonic whorls microscopically punctate. Later whorls without regular sculpture. Aperture rounded, heavily armed, with reflexed and broadly expanded margins. Angular tubercle small, sometimes fused with strong, folded parietal lamella; columellar lamella concave, subhorizontal to oblique;

usually there are 1 or 2 small basal tubercles; palatal wall bears strong lamellar plica and, as a rule, several variously developed marginal knobs. Umbilicus, a very narrow slit. Height 16-33, diam. 7-10 mm (19.0 × 8.0 mm).

Flagellum subcylindrical, somewhat longer than epiphallus. Transition between penis and epiphallus more or less constricted. Penis consists of 2 portions: subcylindrical distal (basal) and swollen proximal; later internally with irregular, longitudinal folds and short verge having slit-like lumen. Penis sheath short. Penial retractor strong, attached to penis at its junction with epiphallus; vas deferens passes through base of retractor. Free oviduct short, vagina markedly longer, enlarged. Spermathecal duct long, subcylindrical, reservoir globose.

DISTRIBUTION. Argentina, Uruguay. About 10 spp. & subspp.

*Tomigerus* Spix, 1827

Spix, 1827: pl. 15 (legend).

TYPE SPECIES — *Tomigerus clausus* Spix, 1827; monotypy.

Shell subglobose, compressed dorsoventrally, moderately to rather solid, shining, a little translucent, of 4.5-5 somewhat convex whorls. Color whitish to yellow, usually with 2-3 brown bands of various width. Embryonic whorls with extremely fine, silky radial striation and spiral, widely spaced, engraved lines. Later whorls with delicate radial wrinkles and sometimes with fine vermiculate sculpture better visible on dorsal side of body whorl. Aperture irregularly ovate to auriculate, subvertical, with reflexed and expanded margins. Aperture heavily armed: parietal wall with 2-3 short lamellae, basal side with 3 also short plicae, palatal margin with 1 or 2 strong, oblique plicae. Umbilicus closed.

Ovoviviparous animals.

DISTRIBUTION. E Brazil, Venezuela.

*Tomigerus* (*Tomigerus* s. str.)  
Fig. 417

— *Pilsbryella* Ihering, 1905 (March): 199 [nom. praeocc., non Nierstrasz, 1905 (January) (Polyplacophora)]; *Tomigerus* subg.; t.-sp. *Helix gibberulus* Burrow, 1815; OD].

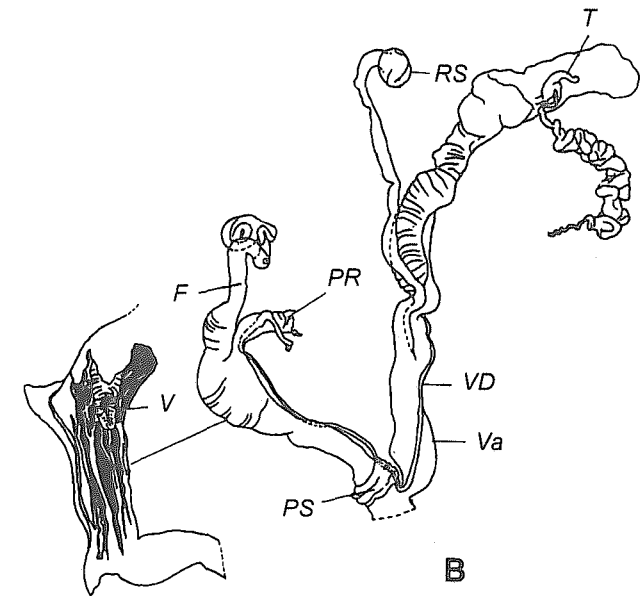
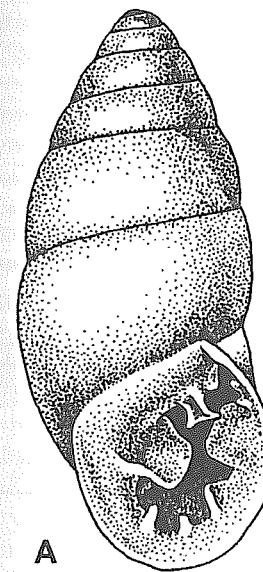


Fig. 416. A — *Plagiodontes dentatus* (Wood, 1828).

Shell: Montevideo (Uruguay). Leiden.

B — ! *Plagiodontes weyembergii* (Döring, 1876). Reproductive tract and interior of penis. After Breure & Schouten, 1985.

— *Cearella* Ihering, 1906: 68 (nom. nov. pro *Pilsbryella* Ihering, 1905).

Palatal plica 1. Height 10-15, diam. 6-21 mm (11.0 × 14.4 mm).

Talon exposed, clavate. Flagellum long. Epiphallus not demarcated from penis. Heath (1913) figured neither penis sheath nor penial retractor. Free oviduct long, swollen. Vagina short, narrow. Spermathecal stalk subcylindrical, long, a little expanded near base. Reservoir subglobose.

REMARK. Ihering (1905: 199) wrote: "As *T. gibberulus* is the oldest species of the genus it becomes necessary to retain for it the name *Tomigerus* s. str., and to form a new subgenus for all the remaining species characterised by a single lamella on the outer lip, for which I propose the name *Pilsbryella*." Thus, the type species of *Tomigerus* gets in the subgenus *Pilsbryella* and this name, along with replacing name *Cearella* is a junior synonym of *Tomigerus* s. str., despite designation of *T. gibberulus* as the type species. For *Helix gibberulus* (Burrow, 1815) Haas (1937) proposed the name *Digerus*.

DISTRIBUTION. E Brazil, Venezuela. 6 spp.

*Tomigerus* (*Digerus* Haas, 1937)  
Fig. 418

Haas, 1937: 246.

TYPE SPECIES — *Helix gibberulus* Burrow, 1815; OD.

Palatal plicae 2. Height 15-16, diam. 19-20 mm (15.8 × 19.1 mm).

DISTRIBUTION. E Brazil (Pernambuco). 1 sp.

*Bonnanius* Jousseume, 1900  
Fig. 419

Jousseume, 1900: 39.

TYPE SPECIES — *Bonnanius bouvieri* Jousseume, 1890 [= *Bulimus* (*Tomigerus*) *ramagei* E. Smith, 1890]; OD.

Shell subglobose, rather solid, of 4-4.5 slightly convex whorls. Coloration of white or yellowish background and 4-5 brown bands. Embryonic sculpture of regular pits. First postnuclear whorl with delicate radial rib-striation, later with fine spiral lines. Aperture irregularly ovate, moderately oblique, with thickened margins and 4-5



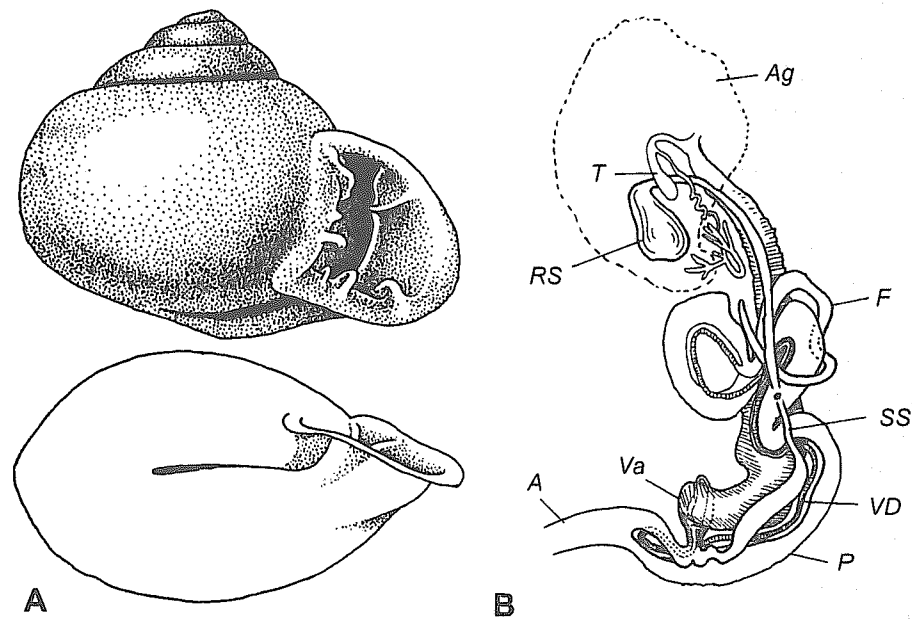


Fig. 417. *Tomigerus (Tomigerus) clausus* Spix, 1827.  
A — shell: Fazenda Lama Preta, Parnaíba, Dept. Piani, Brazil. Leiden. B — reproductive tract. After Heath, 1913.

teeth: small angular (may be absent); 2 subequal parietal; rounded columellar; large, lamellar palatal, located parallel to aperture plane. Umbilicus narrowly open. Height 16.0-23.5, diam. 12-18 mm (16.2 × 12.2 mm).

DISTRIBUTION. Fernando Noronha Island [off E Brazil]. 1 sp.

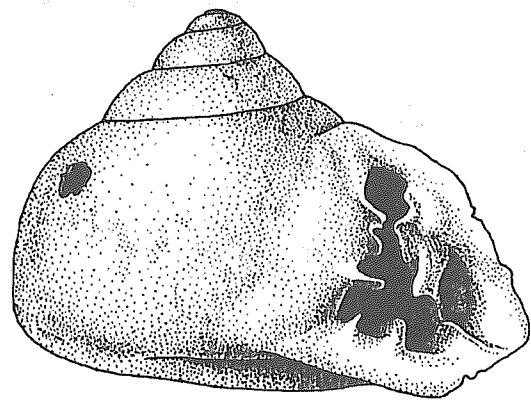


Fig. 418. *Tomigerus (Digerus) gibberulus* (Burrow, 1815).  
No data [worn shell]. Geneva No. INVE 25368.

### *Anostoma*

Fischer von Waldheim, 1807

Fischer von Waldheim, 1807: 230.

— *Tomogeres* Montfort, 1810 (1808-1810): 358 [t.-sp. *Tomogeres ringens* Montfort, 1810 (= *Anostoma octodentatum* Fischer von Waldheim, 1807); non *Helix ringens* Linnaeus, 1758; monotypy].

— *Tomogeres* Blainville, 1824 (1804-1845): 252 [t.-sp. *Tomogeres depressus* "Chemn." (= *Anostoma octodentatum* Fischer von Waldheim, 1807); monotypy].

— *Anostoma* Cristofori et Jan, 1832: 2 (nom. err. pro *Anostoma* Fischer von Waldheim, 1807).

TYPE SPECIES — *Anostoma octodentata*

Fischer von Waldheim, 1807; SD Pilsbry, 1901 (1901-1902).

Shell helicoid, obesely lenticular, quite solid, of 4.5-6 flattened whorls. Last whorl turned upward. Color light-corneous or yellowish, with reddish-brown pattern of irregular spots and supraperipheral and subsutural bands. Embryonic whorls smooth, later without regular sculpture. Aperture nearly horizontal, semicircular, with reflexed and expanded margins and 6-8 teeth. Columella hollow, but imperforate in adults.

Jaw arcuate, of several not converging plates.

Flagellum rather long, vermiform. Epiphallus + penis long, without external demarcation, internally boundary between penis and epiphallus marked by a short closed verge. Inner surface of penis with smoothed longitudinal folds. Penis sheath not long. Penial retractor short, inserted upon distal part of vas deferens. Free oviduct longer than vagina. Spermathecal stalk extremely long, reservoir globose.

DISTRIBUTION. Tropical S America, east of the Andes.

### *Anostoma (Anostoma s. str.)*

Fig. 420

Subsutural portion of palatal margin without channel. Height 15.0-21.5, diam. 30-45 mm (21.3 × 41.8 mm).

DISTRIBUTION. Brazil. About 5 spp.

### *Anostoma (Ringicella) Gray, 1847*

Fig. 421

Gray, 1847: 173.

— *Angystoma* Schumacher, 1817: 69, 229 (nom. nud.).

— *Tomogeres* Jousseaume, 1877: 312 [pro gen.; t.-sp. *Anostoma globulosum* Lamarck, 1822 (= *Helix ringens* Linnaeus, 1758); OD].

TYPE SPECIES — *Anostoma globulosa* Lamarck, 1822 (= *Helix ringens* Linnaeus, 1758), monotypy.

Subsutural portion of palatal margin pierced by channel. Height 10.5-13.0, diam. 18-25 mm (11.4 × 21.0 mm).

Talon long, slender, exposed. Vas deferens follows vagina, then penetrates penial

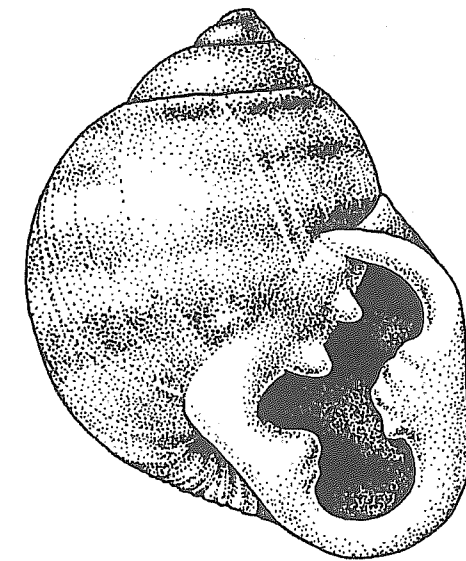


Fig. 419. *Bonnanianus ramagei* (E. Smith, 1890).  
Fernando Noronha Island. Phil. No. 100531.

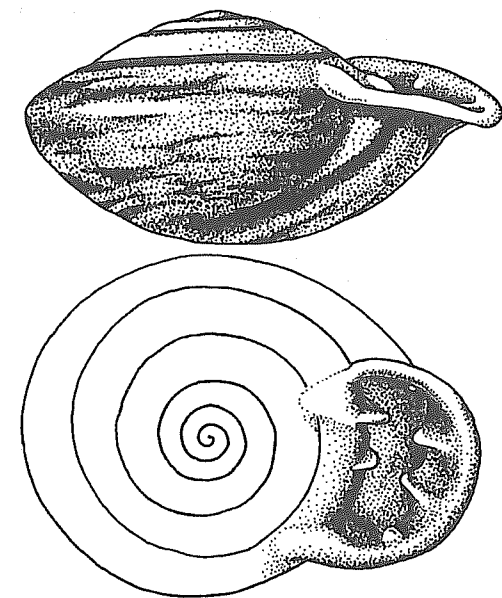


Fig. 420. ! *Anostoma (Anostoma) depressum* Lamarck, 1822.  
Brazil. SPb.



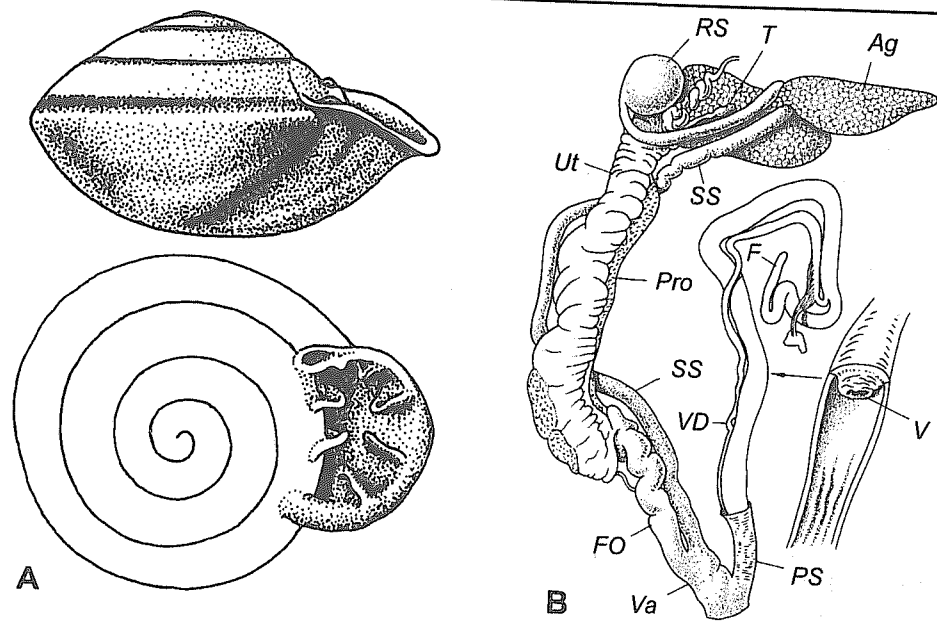


Fig. 421. *Anostoma (Ringicella) ringens* (Linnaeus, 1758).  
A — shell: Brazil. SPb. B — reproductive tract and interior of penis. Brazil. London No. 1995067.

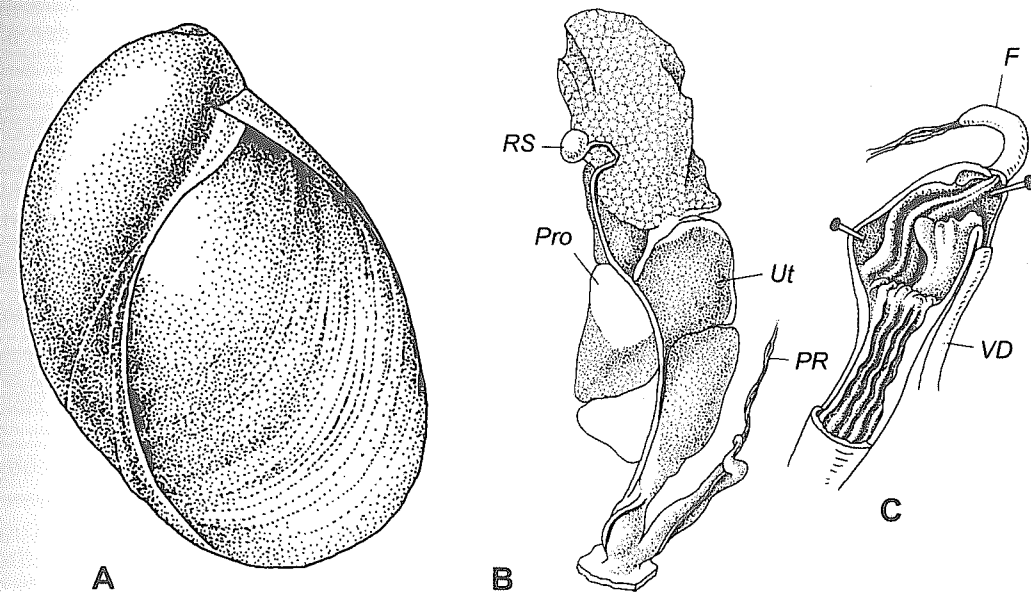


Fig. 422. *Rhodonyx rubescens* (Deshayes, 1830).  
A — shell: Pelil, Antilles. Leiden. B — reproductive tract. C — interior of penis. Martinique. Paris.

sheath and goes along penis and epiphallus to enter laterally; near its entering vas deferens somewhat enlarged. Flagellum moderately long, slender, rounded at its tip. Penis cylindrical, without external boundary with epiphallus; penis/epiphallus junction internally with very short tubular verge. Penial sheath embraces lower half of penis. Free oviduct much longer than vagina. Spermathecal stalk exceptionally long, subcylindrical, embracing albumen gland.

DISTRIBUTION. Brazil. About 5 spp.

#### PELTELLINAE Gray, 1855

Gray, 1855: 155, 179 (as tribe Peltellina).

— Amphibuliminae Fischer, 1873: 325.

Semislugs or slugs; mantle more or less reflexed over shell.

Shell reduced, succinoid to flattened, thin, fragile. Embryonic whorls smooth. Aperture without teeth.

Structure of jaw plates amorphous, their surface smooth.

Talon hidden in albumen gland. Flagellum present. Penis not very long, cylindrical or of irregular shape. Penis sheath ab-

sent. Spermathecal stalk very long or (in 1 genus) wanting.

DISTRIBUTION. Brazil, Puerto Rico, Lesser Antilles.

#### *Rhodonyx* Fischer, 1873

Fig. 422

Fischer, 1873: 325.

— *Mastogyra* Ancey, 1881: 484 (t.-sp. *Succinea rubescens* Deshayes, 1830; OD).

TYPE SPECIES — *Succinea rubescens* Deshayes, 1830; monotypy.

Shell succinoid, thin but rather solid, dull, a little translucent, of 2.5-3 whorls. Last whorl strongly inflated. Color uniformly pinkish. Embryonic whorls somewhat corrugated, later with fine radial wrinkles decussated by irregular spiral lines, and short, obliquely descending impressions, most conspicuous below. Aperture large, ovate, slightly oblique, columellar margin without lamella. Umbilicus absent. Height 18-22, diam. 13-14 mm (20.8 × 13.8 mm).

Prostate of finely alveolar structure, white, contrasting with brown-colored

uterus. Vas deferens loosely adherent to penis, entering epiphallus laterally by simple pore. Flagellum short, slender. Internally distal portion of penis with distinct longitudinal folds; proximal portion with chamber containing fleshy pad of irregular shape and a few stronger longitudinal plicae. Penial retractor attached to flagellum terminally. Free oviduct extremely short (almost absent), vagina short. Spermathecal stalk thin, long, reservoir small, globular, lies on surface of albumen gland.

DISTRIBUTION. Lesser Antilles. 1 sp.

#### *Amphibulima* Lamarck, 1805

Fig. 423

Lamarck, 1805: 304.

TYPE SPECIES — *Bulimus patula* Bruguière, 1789; SD Pilsbry, 1899.

Shell succinoid, ear-shaped, thin but rather solid, more or less translucent, composed of no more than 3 whorls. Color corneous, reddish, yellow or olivaceous, usually with zigzagged, dotted or linear streaks. Embryonic whorls corrugated, subsequent whorls with coarse malleation, ir-

regular spiral striation and also irregular radial striation. Aperture very large, broad, columellar margin with scarcely developed lamella or without it. Umbilicus absent. Height 18-33, diam. 10-25 mm (33.0 × 21.8 mm).

Flagellum enlarged, moderately long. Epiphallus swollen, separated from penis by constriction. Penis oblong, somewhat expanded. Penial retractor inserted upon flagellum apically. Free oviduct extremely short, vagina considerably swollen. Spermathecal stalk subcylindrical, long, reservoir small, globose.

DISTRIBUTION. Lesser Antilles (Guadeloupe, Dominica, St. Kitts, Saba, St. Vincent, Montserrat Islands). 2-3 spp.

#### *Pellicula* Fischer, 1856

Fig. 424

Fischer, 1856: 68.

TYPE SPECIES — *Pellicula depressa* Fischer, 1856 (= *Succinea appendiculata* L. Pfeiffer, 1848); OD.

Shell succinoid, thin, very fragile, translucent, of about 1.5 whorls. Color whitish,

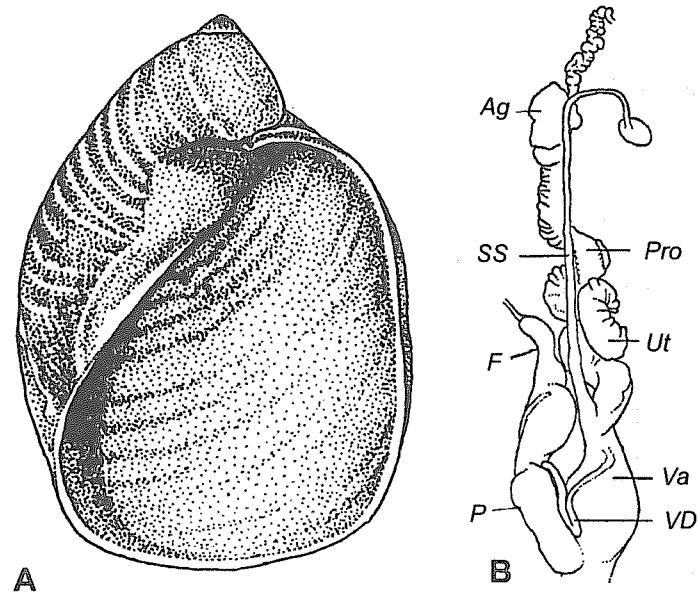


Fig. 423. *Amphibulima patula* (Bruguière, 1789).  
A — shell: Guadeloupe. Phil. No. 26045. B — reproductive tract. After Breure, 1974b.

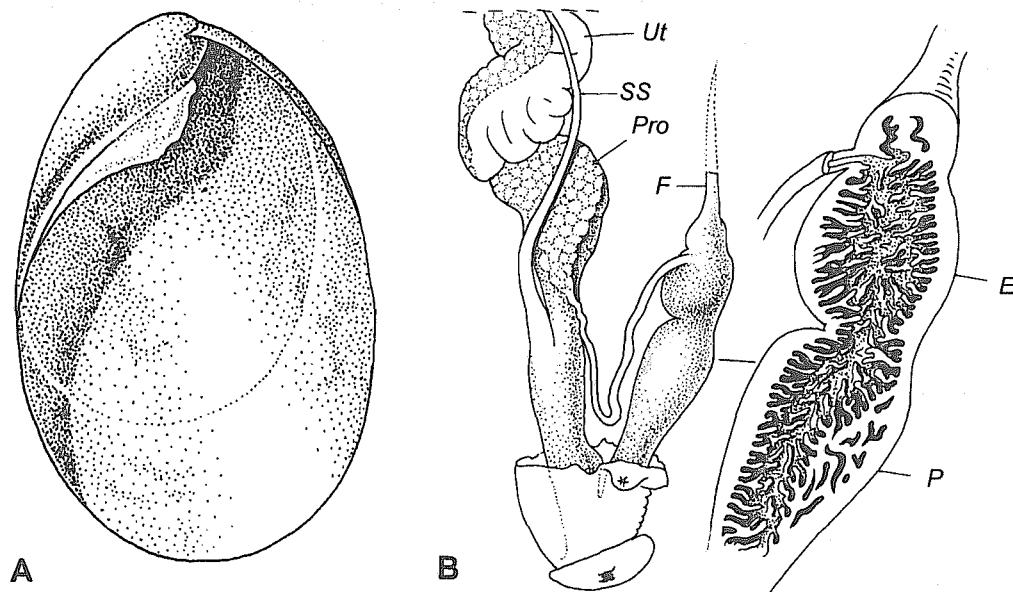


Fig. 424. A — *Pellicula appendiculata* (L. Pfeiffer, 1848).  
A — shell: no data. Phil. No. 26060. B — reproductive tract and interior of penis: Guadeloupe. Paris.

greenish, olivaceous or brownish. Embryonic whorls smooth, subsequent with very fine, irregular radial wrinklets and delicate elements of spiral striae. Aperture exceptionally large, its height only slightly lesser than shell height; columellar margin with thin but high lamella. Umbilicus absent. Height 12-14, diam. 8-10 mm (12.5 × 8.0 mm).

Jaw (according to Fischer, 1856) of several projecting, widely spaced plates.

Vas deferens not adherent, entering penis laterally by simple pore. Flagellum very short. Penis externally divided into two chambers; internally both chambers covered with numerous high papillae, some of them branched. Penial retractor attached apically. Free oviduct very short, vagina rather long. Fischer (1856) illustrated spermatheca with very short stalk, however, in the specimen dissected by me it is rather long.

DISTRIBUTION. Guadeloupe Island. 2 spp.

*Peltella* Webb et Vanbeneden, 1836  
Fig. 425

Webb & Vanbeneden, 1836: 1, pl. 75, 76.

— *Pectella* Gray, 1847: 170 (nom. err. pro *Peltella* Webb et Vanbeneden, 1836).

TYPE SPECIES — *Parmacella palliolum* Fé-russac, 1821; monotypy.

Slugs with shell much reduced, ear-shaped, scarcely calcified, thin, of 1.75 whorls. Basal wall of shell absent. Diam. 18 mm.

Flagellum rather short, cylindrical. Penis + epiphallus long, without visible demarcation. Penial retractor attached apically. Free oviduct somewhat shorter than vagina. Spermathecal stalk rather long, cylindrical, reservoir poorly defined.

DISTRIBUTION. Brazil. 2 sp.

*Gaeotis* Shuttleworth, 1854  
Fig. 426

Shuttleworth, 1854: 34. Breure, 1974b: 237.

TYPE SPECIES — *Gaeotis nigrolineata* Shuttleworth, 1854; SD Thiele, 1931.

Shell depressed, auriculate, much reduced, thin, fragile, membranous, scarcely

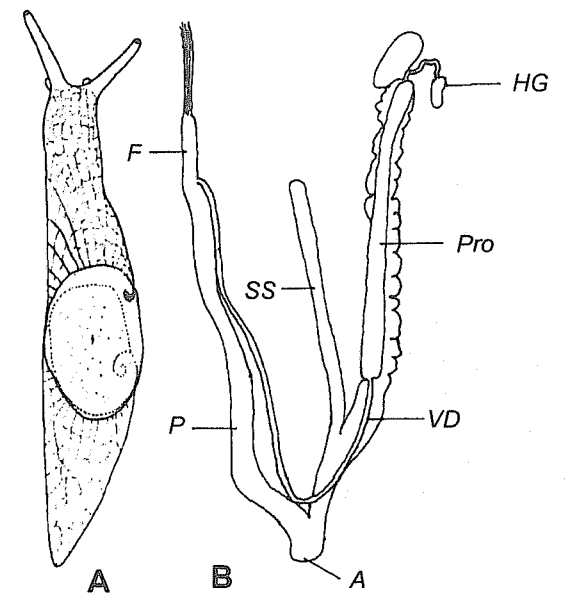


Fig. 425. ! *Peltella iheringi* Leme, 1968.  
A — external view of animal. B — reproductive tract of immature specimen. After Van Mol, 1971.

calculated, of 2-2.5 whorls. Color corneous. Embryonic whorls nearly smooth, later whorls with more or less developed radial smoothed wrinkles. Basal part of shell absent. Diam. 12-20 mm (14.5 mm).

Jaw long and low, composed of numerous narrow plates, without median triangular area.

Flagellum not long. Epiphallus rather short, penis a little longer, somewhat swollen, separated from epiphallus by constriction. Free oviduct very short, vagina expanded and short. Spermatheca sessile, i.e. without stalk.

DISTRIBUTION. Puerto Rico. 4-5 spp.

PLACOSTYLINAE Pilsbry, 1946

Iredale, 1944: 309 (nom. nud.). Pilsbry, 1946a: 3.

Embryonic whorls more or less sculptured. Aperture generally toothless, although columellar lamella and parietal tooth may occasionally present.

Jaw plates amorphous, their surface microgranulate.

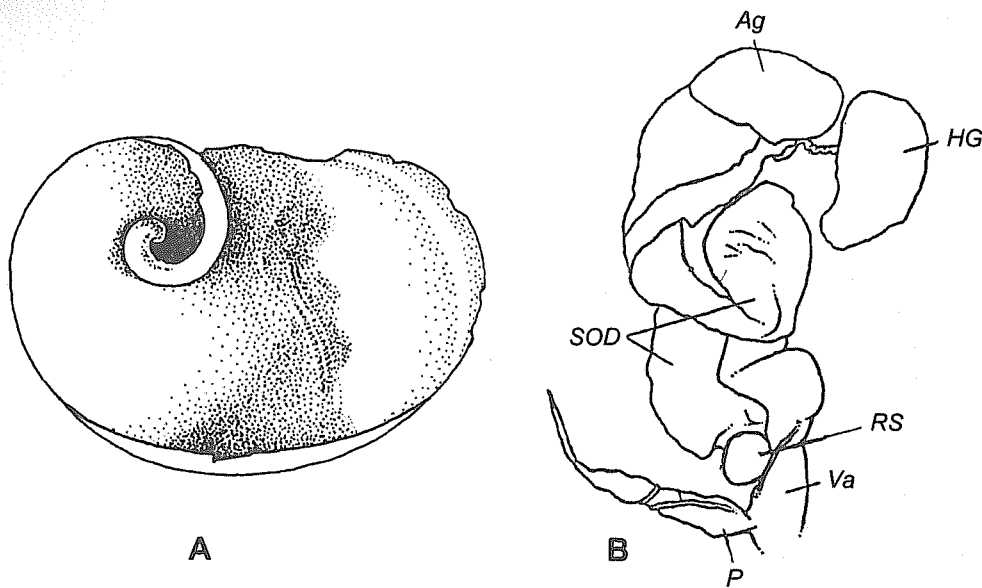


Fig. 426. A — *Gaetis nigrolineata* Shuttlesworth, 1854. Shell: Humacao, Puerto Rico. Phil. No. 4613. B — *Gaetis* sp. Reproductive tract. After Breure, 1974b.

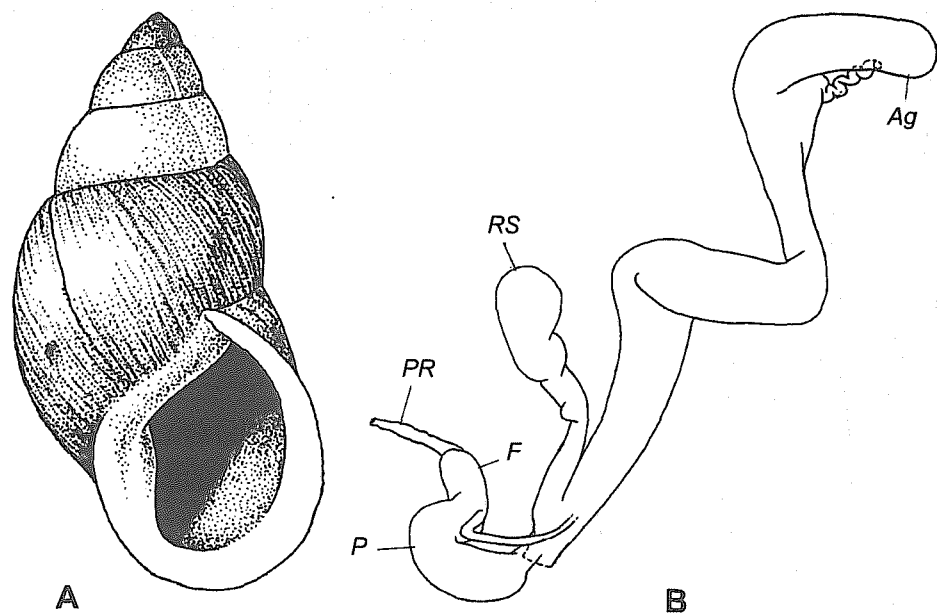


Fig. 427. *Diplomorpha (Quiros) bernieri* (Hartman, 1890). A — shell: Segond Channel, Espiritu Santo [New Hebrides]. Phil. No. 132670. B — reproductive tract. After Breure & Schouten, 1985.

Talon hidden or exposed. Flagellum very short or absent. Penis short, mostly club-shaped, without accessory gland. Penis sheath absent or attached at both ends and may be found only after dissection of penis. Spermathecal stalk usually short.

DISTRIBUTION. W and SW Pacific islands (New Guinea, New Hebrides, Santa Cruz Island, New Caledonia, Loyalty Islands, New Zealand, Lord Howe Island, Solomon Islands, Fiji).

#### *Diplomorpha* Ancey, 1884

Ancey, 1884: 344.

— *Hebridaria* Pilsbry, 1900a: 114 [nom. nov. pro *Diplomorpha* Ancey, 1884, non *Diplomorphus* Giraud, 1871 (Hymenoptera); t.-sp. *Partula layardi* Ancey, 1884; OD].

TYPE SPECIES — *Partula layardi* Brazier in Ancey, 1884; OD.

Shell elongated-conic to ovate, solid, of 3.5-5.5 convex whorls. Color white, yellow or pinkish. Embryonic whorls densely sculptured with waved or crinkled wrinkles, later nearly smooth. Aperture ovate, with thickened or reflexed margins, usually stained with orange or red inside. Teeth absent or tubercular parietal and columellar lamellae variously developed; palatal thickening sometimes present. Umbilicus small, round or elliptic.

DISTRIBUTION. New Hebrides.

#### *Diplomorpha (Quiros) Solem, 1959*

Fig. 427

Solem, 1959: 145.

TYPE SPECIES — *Bulimus bernieri* Hartman, 1890; OD.

Shell elongated-ovoid, solid, of about 5 whorls. Color light-corneous to whitish, aperture pinkish inside. Embryonic sculpture of widely spaced radial striae. Later whorls with radial wrinkles, suture often crenulate. Aperture ovate, moderately oblique, with reflexed, thickened margins. Parietal tooth absent, columellar margin more or less expanded. Umbilicus narrow. Height 23.7-37.3, diam. 12.2-14.7 mm (24.5 × 13.2 mm).

Talon hidden. Vas deferens unusually short, not adherent, entering laterally. Flagellum stout, rounded. Penis short, swollen. Penial retractor attached to flagellum

apically. Free oviduct nearly absent, vagina extremely short. Spermathecal stalk short, expanded, reservoir voluminous.

DISTRIBUTION. Espiritu Santo Island, New Hebrides. 1 sp.

#### *Diplomorpha (Diplomorpha) s. str.*

Fig. 428

Shell subglobose to ovate, solid, dull or slightly shining, of 3.5-5.5 moderately convex whorls. Last whorl inflated. Color uniformly whitish, yellow or pinkish. Embryonic whorls finely radially striated, later with irregular radial wrinkles. Aperture large, ovate, with thickened, reflexed, expanded margins and lip at short distance from edge. Parietal wall with tubercular tooth, columellar margin with subvertical entering lamella. Umbilicus narrow, cylindrical. Height 16-28, diam. 11.5-17.0 mm (18.5 × 13.1 mm).

Jaw arcuate, with numerous narrow, slightly converging plaits separated by shallow grooves.

Talon hidden. Vas deferens entering subapically. Epiphallus nearly cylindrical, a little swollen in its transition to penis; both ducts covered with very thin, transparent sheath. Internally epiphallus with irregular pilaster and a few folds which broken into tubercles; penis heavily rugose, most rugae descending diagonally with numerous wrinkles on them so that they seem series of short folds connected end to end; lower part with few heavy but indistinct folds. Penial retractor attached terminally. Free oviduct and vagina somewhat expanded, short. Spermatheca without differentiation into stalk and reservoir, with apical ligament.

DISTRIBUTION. Hew Hebrides. 9-10 spp. & subspp.

#### *Placostylus* Beck, 1837

Beck, 1837: 57.

TYPE SPECIES — *Bulimus fibratus* Martyn, 1789; SD Pilsbry, 1900a.

Shell large, elongated, solid, of 3.5-7 whorls. Color various, sometimes with variegated pattern. Embryonic whorls smooth, pitted, spirally striated or finely radially ribbed; later more or less coarsely radially striated; elements of spiral sculpture may

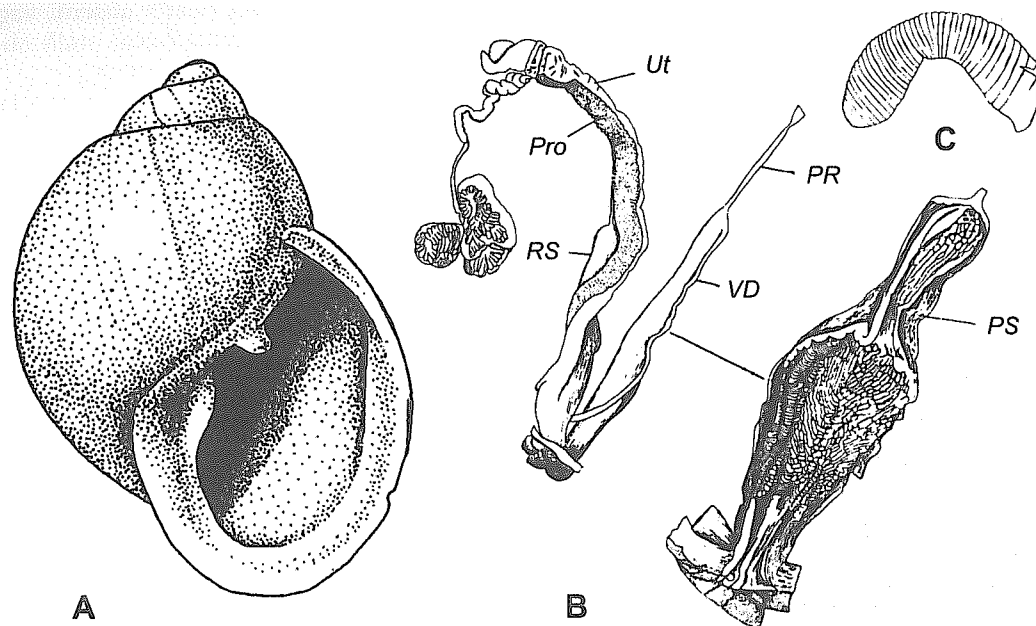


Fig. 428. A — *Diplomorpha (Diplomorpha) layardi* (Ancey, 1884). Shell: Vale Island, New Hebrides. Moscow No. Lc-19606 (Leiden). B, C — ! *Diplomorpha (Diplomorpha) delatouri* (Hartman, 1886). B — reproductive tract and interior of male division. C — jaw. After Kondo, 1948.

be present. Aperture generally ovate, with more or less thickened margins; parietal tubercle and columellar lamella sometimes present. Umbilicus closed or very narrow.

Talon not hidden (exception: *Proaspastus*). Penis rather short, bulky, with sheath attached at both ends. Spermathecal shaft short to very short, usually with apical ligament.

DISTRIBUTION. New Guinea, New Caledonia, Loyalty Islands.

*Placostylus (Maoristylus) Haas, 1935*  
Fig. 429

Haas, 1935: 189. Breure & Schouten, 1985: 56.

TYPE SPECIES — *Bulimus shongii* Lesson, 1832; OD.

Shell ovate, more or less elongated, solid and ponderous to relatively thin, of 6-7 moderately convex whorls. Apex pointed. Color yellowish-brown to blackish, often becoming lighter toward apex; sometimes with darker radial streaks; aperture orange or brownish-bluish inside, parietal callus creamy or ivory. Apical

whorls more or less distinctly pitted, sculpture of later whorls combined of three elements: coarse radial wrinkles, delicate radial striation, and widely spaced wavy spiral grooves becoming weaker on body whorl. Aperture ovate, margins thickened and somewhat reflexed. Columellar margin subvertical. Umbilicus, a narrow slit. Height 42-85, diam. 20-40 mm (76.0 × 33.0 mm).

Talon short, curved. Flagellum subglobose. Epiphallus as such absent. Penis swollen, subcylindrical, thick-walled, internally with high, irregular, longitudinal folds. Penis sheath rather thick. Free oviduct almost absent. Vagina not long. Spermathecal stalk thick-walled, internally with longitudinal, more or less corrugated folds. Reservoir variously developed, with apical ligament attached to prostate.

DISTRIBUTION. New Zealand, Lord Howe Island. 5-7 spp. & subspp.

*Placostylus (Basileostylus) Haas, 1935*  
Fig. 430

Haas, 1935: 188.

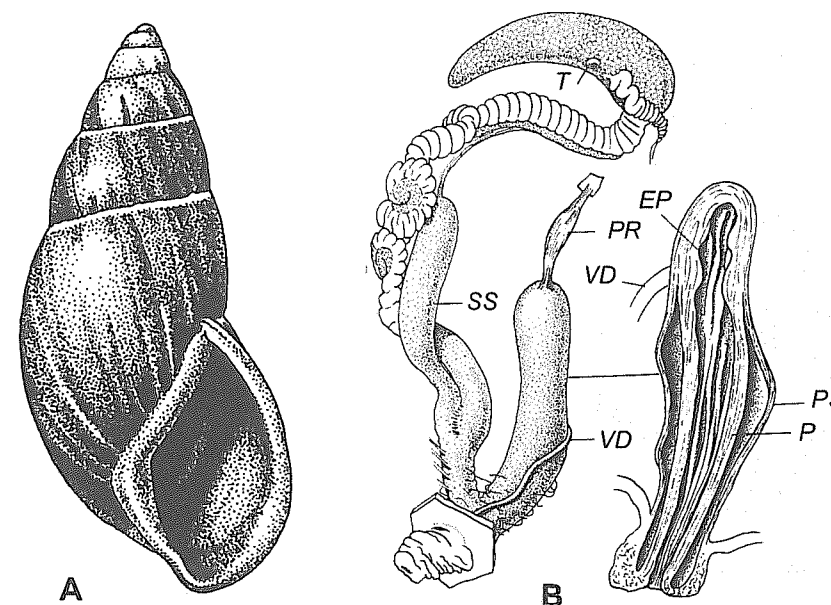


Fig. 429. *Placostylus (Maoristylus) shongii* (Lesson, 1832). A — shell: N of Whananaki, North Island, New Zealand. Moscow No. Lc-21358 (Phil.). B — reproductive tract and interior of penis: Cape van Dimen, North Island, New Zealand. SPb.

TYPE SPECIES — *Placostylus bollonsi* Suter, 1908; OD.

Shell turrated, quite solid, of 6-6.5 moderately convex whorls. Apex slightly protruded. Color brownish-olive, aperture brightly orange inside. Embryonic whorls finely, sharply, obliquely ribbed, later with rather coarse, irregular, radial wrinkles. Spiral sculpture absent or scarcely visible. Aperture rounded or roughly rounded-triangular, with strong parietal callus; margins only slightly thickened. Umbilicus, a short rim. Height 90-100, diam. 37-42 mm (93.2 × 38.3 mm).

DISTRIBUTION. Three Kings Islands (New Zealand). 1 sp.

*Placostylus (Placostylus) s. str.*  
Fig. 431

Shell acuminate-ovate, solid to very solid, of 5-6 moderately to slightly convex whorls. Color roseate to brown, monochromatic or with weak darker, sometimes interrupted, spiral bands; aperture brown or pink inside, lip white. Embryonic whorls irregularly, microscopically punctate. Sub-

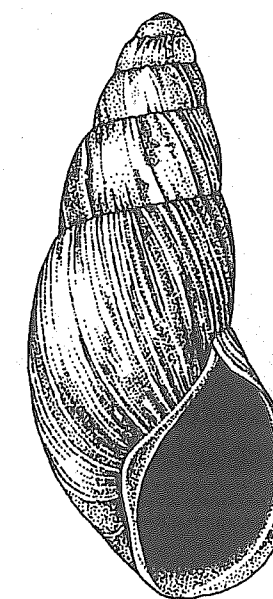


Fig. 430. *Placostylus (Basileostylus) bollonsi* Suter, 1908. North East Id., Three Kings Is., New Zealand. Phil. No. 204424.



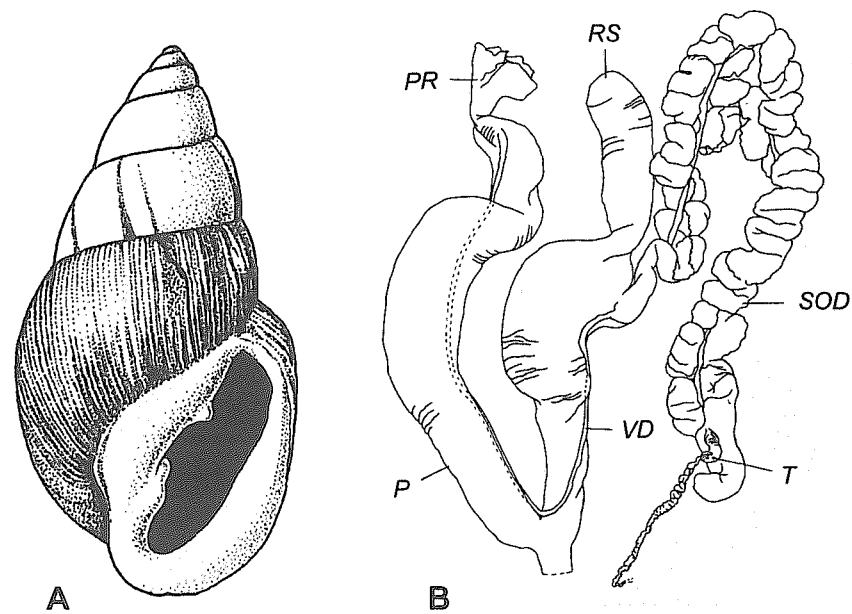


Fig. 431. A — *Placostylus (Placostylus) fibratus* (Martyn, 1789). Shell: New Caledonia. Moscow No. Lc-23109. B — ! *Placostylus (Placostylus) porphyrostomus* (L. Pfeiffer, 1853). Reproductive tract. After Breure & Schouten, 1985.

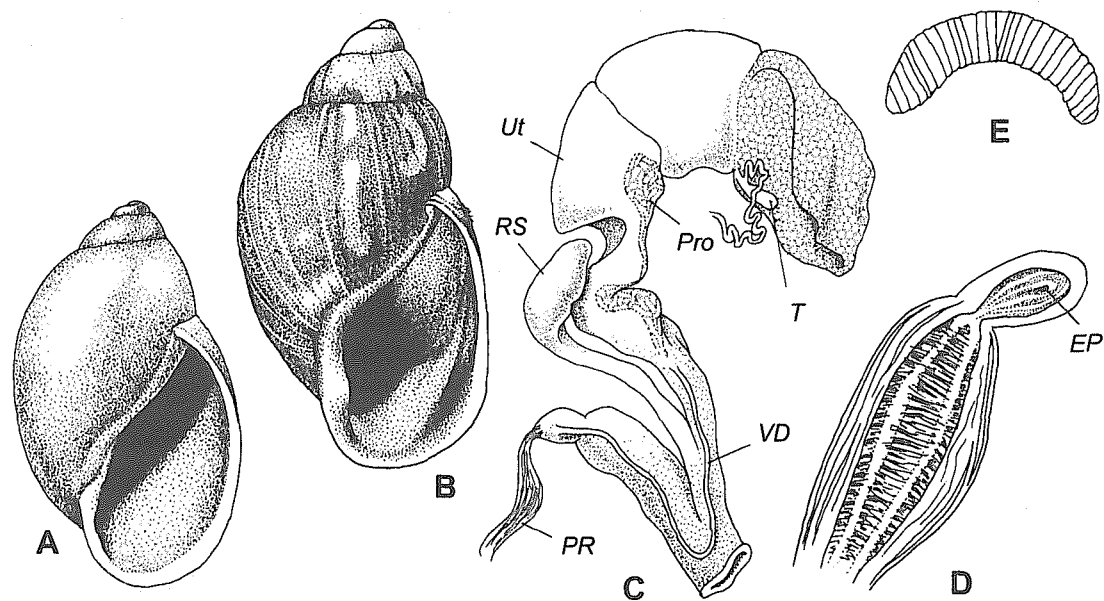


Fig. 432. A — *Placostylus (Santacharis) hullianus* (Iredale, 1927). Shell: Santa Cruz Island, New Hebrides. Basel No. 7132-a. B, C, D, E — ! *Placostylus (Santacharis) salomonis* (L. Pfeiffer, 1853). Eromanga Island, New Hebrides, August 6-10, 1971. B — shell. C — reproductive tract. D — interior of penis. E — jaw. Moscow No. Lc-23339.

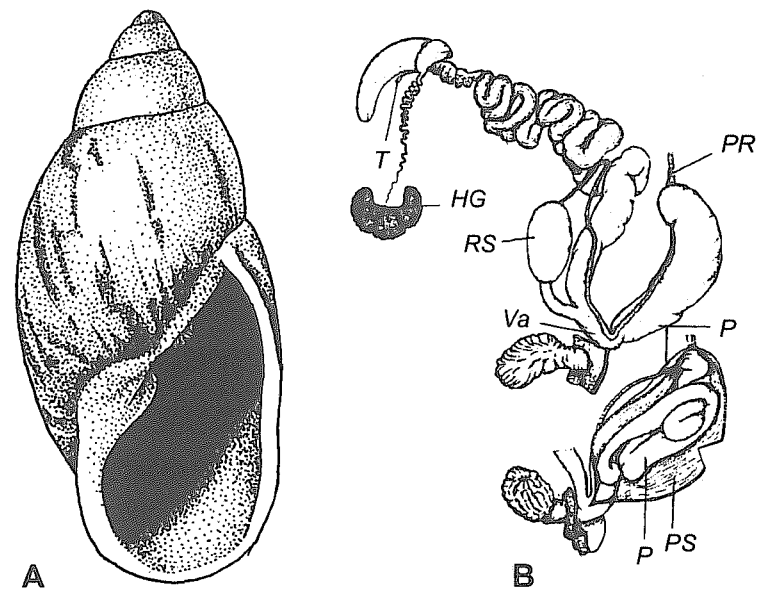


Fig. 433. A — *Placostylus (Placocharis) macgillivrayi* (L. Pfeiffer, 1856). Shell: "Australia". Paris. B — ! *Placostylus (Placocharis) palmarum* (Mousson, 1869). Reproductive tract and interior of penis. After Turner & Clench, 1972.

sequent whorls with more or less coarse, crowded, narrow radial wrinkles and uneven, wavy spiral grooves. Aperture of irregular shape, vertical, often obstructed by lip and teeth. Margins more or less thickened. Parietal and columellar lamellae variously developed, sometimes much reduced. Umbilicus closed or (rarely) narrowly open. Height 50-130, diam. 30-56 mm (77.7 × 40.3 mm).

Talon rather large, exposed. Vas deferens adherent to vagina and penis. Flagellum exceptionally short or absent. Penis and epiphallus subcylindrical, without distinct demarcation. Free oviduct absent. Vagina not long. Spermathecal duct rather short, strongly swollen basally, reservoir voluminous, poorly defined.

DISTRIBUTION. New Guinea, New Caledonia, Loyalty Islands. 20-25 spp.

#### *Placostylus (Santacharis) Iredale, 1927* Fig. 432

Iredale, 1927: 77 (pro gen.).

TYPE SPECIES — *Santacharis hullianus* Iredale, 1927; OD.

Shell elongated-ovate, solid, of 3.5-4 slightly convex whorls. Color yellow to brown, often with darker radial streaks; apertural margins reddish to pinkish. Embryonic whorls nearly smooth or with very fine spiral striae, later whorls sometimes with wavy spiral grooves (especially on last whorl). Aperture ovate, subvertical, margins more or less thickened; columellar a little twisted above, expanded, with low lamella. Umbilicus, a minute rim. Height 29-40, diam. 17-22 mm (*hullianus*: 30.3 × 17.6 mm; *salomonis*: 28.3 × 18.8 mm).

Jaw with many narrow, overlapping, slightly converging plates and narrowly-triangular area in middle.

Talon clavate, exposed. Vas deferens tightly adherent to vagina and penis, entering very short epiphallus subapically by simple pore. Epiphallus very short, ovate, separated from penis by constriction, internally with a few longitudinal folds. Penis bulky, enlarged, coated by thick, loose sheath; perhaps, this "sheath" is thick walls of penis filled with loose tissue. Internally penis with a few wide longitudinal folds connected by numerous sharp, thin lamellae. Free oviduct and vagina of about equal

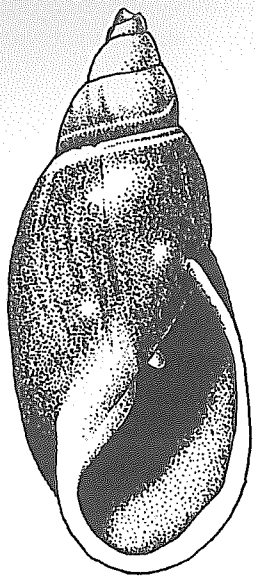


Fig. 434. *Placostylus (Malaitella) acutus* Clench, 1935. Wanderer Bay, Guadalcanal, Solomon Islands. Paratype. Basel No. 8079-a.

length. Spermatheca embedded to spermoviduct, stalk not long, reservoir irregularly ovate.

DISTRIBUTION. Santa Cruz Island, New Hebrides. 3-4 spp.

*Placostylus (Placocharis) Pilsbry, 1900*  
Fig. 433

Pilsbry, 1900a: 21, 79 (pro sect.).

TYPE SPECIES — *Bulimus macgillivrayi* L. Pfeiffer, 1856; OD.

Shell fusiform, quite solid, of about 5 slightly convex whorls. Color not bright, yellowish to brown, uniform or with darker streaks, rarely with zigzagged or triangular markings. Early whorls often pink. Periostracum easily detaching. Embryonic whorls with accurate chequer-wise arranged pits, later radially wrinkled; body whorl with delicate, crowded, wavy spiral grooves. Aperture elongated-ovate, somewhat obstructed by variously developed tubercular parietal and oblique columellar lamellae; margins markedly thickened. Umbilicus closed or nearly so. Height 45-80, diam. 22-38 mm (48.0 × 23.2 mm).

Jaw strong, nearly smooth with only trace of vertical folds.

Talon slender, clavate. Spermoviduct strongly convoluted; prostate hidden among folds of uterus. Vas deferens adheres to free oviduct and penis, entering penis subapically. Penis long, muscular, greatly looped within sac-like thin-walled sheath; internally with prominent, corrugated, longitudinal pilasters. Free oviduct much longer than vagina. Spermathecal stalk rather short, reservoir ovate, large, with apical ligament; stalk and reservoir closely bound to free oviduct.

DISTRIBUTION. Solomon Islands. About 15 spp. & subsp.

*Placostylus (Malaitella) Clench, 1941*  
Fig. 434

Clench, 1941: 11 (nom. nov. pro *Acrostylus* Clench, 1935).

— *Acrostylus* Clench, 1935: 126 (nom. praeocc., non Cossmann, 1896; t.-sp. *Placostylus acutus* Clench, 1935; OD).

TYPE SPECIES — *Placostylus (Acrostylus) acutus* Clench, 1935; OD.

Shell elongated, compressed dorsoventrally, rather solid, of 5-6 slightly convex whorls. Color uniform: red, reddish-brown or greenish. Embryonic whorls with chequer-wise, very regular sculpture of minute pits. Postnuclear whorls slightly radially wrinkled. Aperture ovate, nearly vertical, with sharply reflexed margins. Parietal wall with variously developed tooth, columellar margin bears low, subvertical lamella. Umbilicus slit-like. Height 67-78, diam. 23-31 mm (63.4 × 22.0 mm).

DISTRIBUTION. Solomon Islands. 2 spp.

*Placostylus (Proaspastus) Clench, 1941*  
Fig. 435

Clench, 1941: 12.

TYPE SPECIES — *Bulimus san-christovalensis* Cox, 1870; OD.

Shell elongated-fusiform, more or less compressed laterally, moderately solid, glossy, of 5-6 slightly convex whorls. Apex blunt. Color yellow or olive-yellow, spotted with irregular radial blotches, sometimes

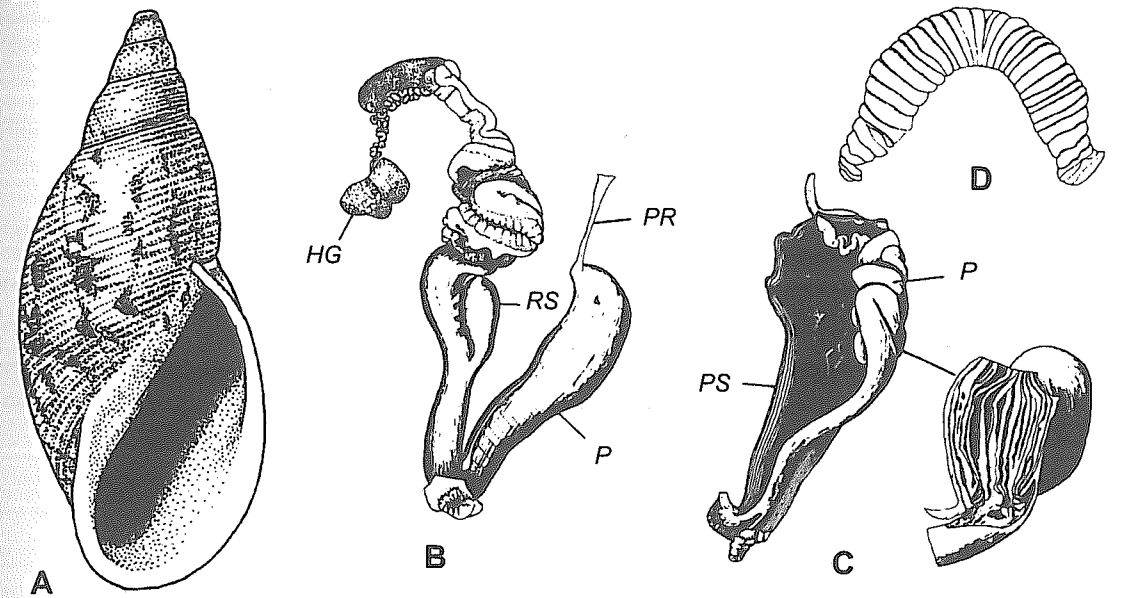


Fig. 435. A — *Placostylus (Proaspastus) sanchristovalensis* (Cox, 1870).

Shell: Solomon Islands. Phil. No. 393.

B, C, D — ! *Placostylus (Proaspastus) hargravesi* (Cox, 1871). B — reproductive tract. C — interior of penis sheath and interior of penis. D — jaw. After Kondo, 1948.

triangular, and small ovate blackish-brown spots; spire roseate; aperture inside white, broadly bordered with red-orange. Embryonic and early postembryonic whorls densely punctate. Last 2-3 whorls densely corrugated spirally, wrinkles occasionally confluent. Aperture oblong-ovate, margins rather widely reflexed, hardly thickened within. Columella expanded, with low spiral lamella. Umbilicus absent. Height 48-92, diam. 20-38 mm (68.1 × 26.3 mm).

Jaw composed of about 40 distinct, somewhat converging plates; median portion with small triangular area.

Talon hidden. Vas deferens tightly appressed to penis 3/4 of way, then entering penis to continue toward summit. Penis large, bulky, clavate, coated with thick sheath, containing strongly convoluted tube (penis proper) inside, about 2.5 times of sheath length. Penis internally with numerous, thin, longitudinal folds. Free oviduct and vagina stout, of about equal length. Spermathecal stalk extremely short, reservoir elongated-ovoid, with apical ligament.

DISTRIBUTION. Solomon Islands. 2 or 3 spp.

*Euplacostylus* Crosse, 1875  
Fig. 436

Crosse, 1875: 9.

TYPE SPECIES — *Bulimus seemanni* Dohrn, 1861; SD Pilsbry, 1900a.

Shell oblong-fusiform, relatively slender, solid, of 5-6 moderately convex whorls. Apex obtuse. Color flesh-tinted or straw under yellowish-brown, olivaceous or chestnut periostracum; often with zigzagged radial streaks; aperture inside flesh-colored or brown. Embryonic whorls regularly pitted, later with rather coarse radial wrinkles. Aperture ear-shaped, with rather thick, reflexed margins. Umbilicus, a narrow and short rim. Height 43-77, diam. 20-30 mm (65.0 × 22.3 mm).

Jaw as in *Placostylus (Proaspastus)*.

Vas deferens exceptionally short, free to middle of penis, then running within sheath to point near retractor, and opening into epiphallus through minute pore. Epiphallus small, internally slightly rugose, connecting with penis via short, narrow channel. Penis very short and enormously swollen, subglobose; interior of its lower portion composed of 2 parts: (1) heavily rugose portion of one side and roof where

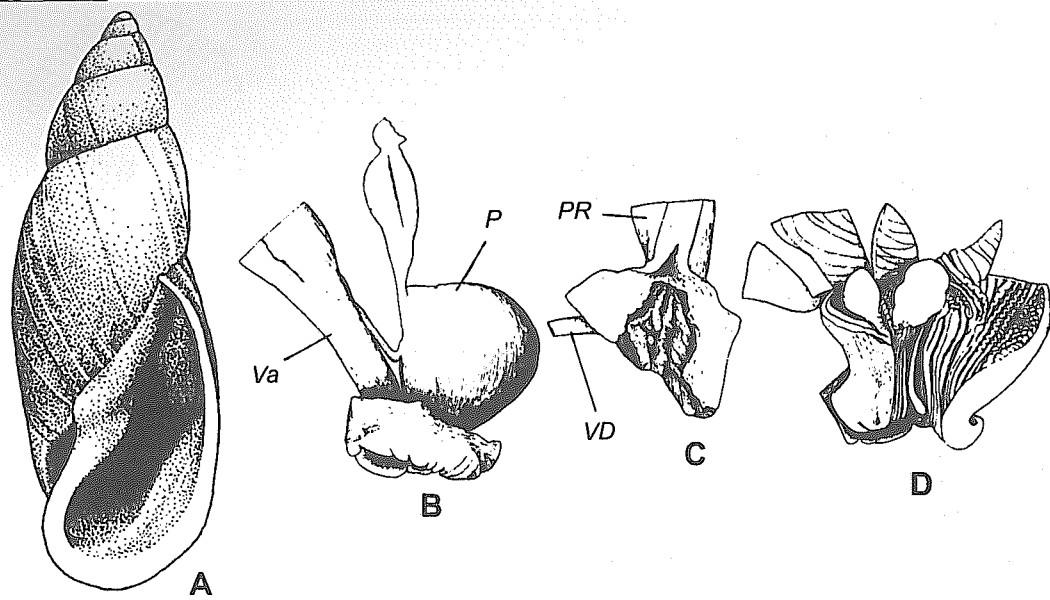


Fig. 436. A — *Euplacostylus seemanni seemanni* (Dohrn, 1861). Shell: Fiji. Phil. No. 191992. B, C, D — *Euplacostylus seemanni mbendensis* Cooke, 1942. B — penis and distal portion of female division. C — interior of upper portion of penis. D — interior of lower portion of penis. After Kondo, 1948.

rugae often take zigzag or serpentine courses and (2) thicker portion, also rugose but having 1 or 2 sacs (stimulators?) projecting from penis midbody at point where vas deferens enters sheath; these sacs surrounded by wrinkled folds and filled with profusion of delicate muscle fibres. Penis sheath thick. Penial retractor strong, apical.

DISTRIBUTION. Fiji Islands. 2 or 3 spp.

*Eumecostylus* Martens, 1860  
Fig. 437

Martens in Albers, 1860: 186 (*Bulimus* subg.).

TYPE SPECIES — *Bulimus cleryi* Petit, 1850; OD.

Shell oblong-fusiform, more or less compressed laterally, rather thin but solid, lusterless, of 5.5-6.5 slightly convex whorls. Color pink, yellow, yellowish-brown or olive-yellow, uniform or spotted with irregular radial blotches. Embryonic whorls (sometimes amputated) with regular sculpture of small dots; postembryonic surface with coarse, irregular radial wrinkles. Aperture auriculate, slightly oblique, with thickened, a little reflexed margins. Parietal

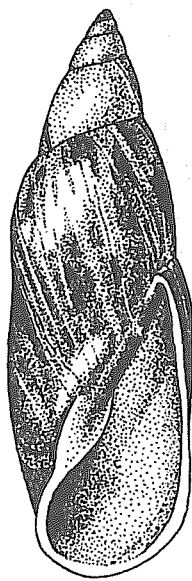


Fig. 437. *Eumecostylus cleryi* (Petit, 1850). San Christoval Island [Solomon Islands]. Leiden.

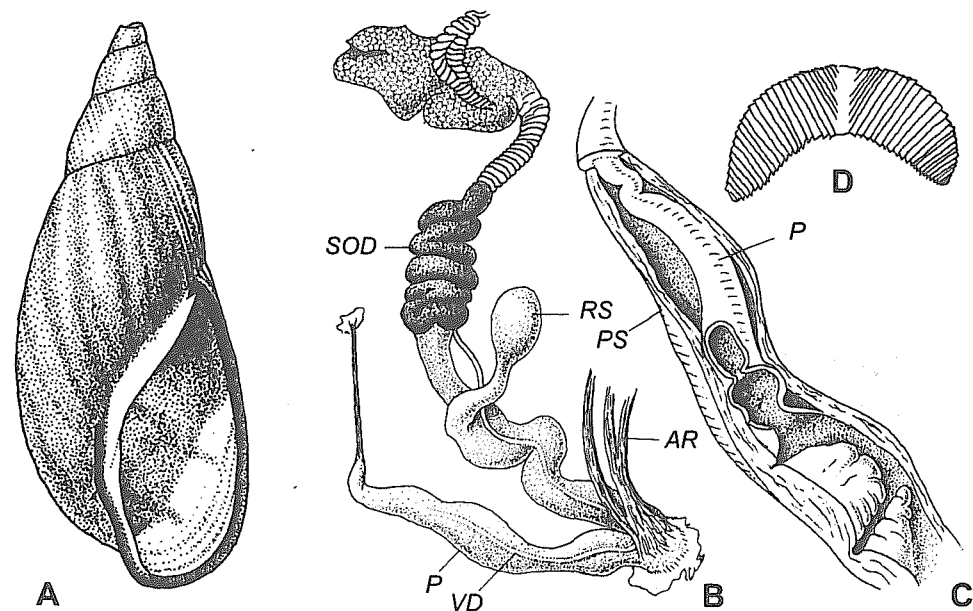


Fig. 438. *Aspustus (Aspustus) miltocheilus* (Reeve, 1848). A — shell: Honiara, Guadalcanal, Solomon Islands. Moscow No. Lc-23328. B, C, D — Near Wainoni, San Cristoval [Solomon Islands]. B — reproductive tract. C — interior of penis. D — jaw. Moscow No. Lc-23341 (London).

margin with thin callus, sometimes bearing small tubercle. Columellar margin with strong spirally entering lamella. Umbilicus, a minute rim or perforation. Height 63-103, diam. 25-35 mm (92.2 × 30.2 mm).

DISTRIBUTION. Solomon Islands. 2 spp.

*Aspustus* Albers, 1850

Albers, 1850: 149 (*Bulimus* subg.).

TYPE SPECIES — *Bulimus miltocheilus* Reeve, 1848; monotypy.

Shell elongated, rather thin, of 4-6 whorls. Color light yellow to white. Embryonic sculpture of regular punctation. Later whorls nearly smooth to gently ribbed, sometimes with malleation or spiral lines. Aperture rather large, acuminate or ear-shaped. Umbilicus very narrow.

DISTRIBUTION. Solomon, Fiji, Loyalty islands, New Caledonia, New Hebrides.

*Aspustus (Aspustus) s. str.*  
Fig. 438

Shell ovate-conic, more or less thin but

rather firm, porcellaneous, translucent, of 5-6 weakly or moderately convex whorls. Color white to dark-yellow, apertural margins red or orange. Postembryonic whorls with smoothed but coarse, irregular radial wrinkles and spiral engraved lines better developed on early whorls. Aperture subvertical, elongated, its margins slightly thickened and shortly reflexed; columellar margin with smoothed, oblique lamella. Umbilicus dot-like, semicovered. Height 45-70, diam. 21-24 mm (58.0 × 22.8 mm).

Jaw thin, of many narrow, converging plates, with rather broad smooth space in middle; both edges of jaw minutely jagged.

Talon completely hidden in albumen gland. Uterus strongly convoluted, heavily pigmented, prostate yellow, occupies ad-columellar side of spermoviduct. Vas deferens at first free, then tightly adherent to vagina, atrium and penis, entering at short distance from blind end. Penial sheath fused with thick walls of penis. Internally basal section of penis with valve of two strong, fleshy pads, separated from each other by narrow, deep, semicircular groove; above upper of these pads lumen of penis contains a couple of chambers and strong,



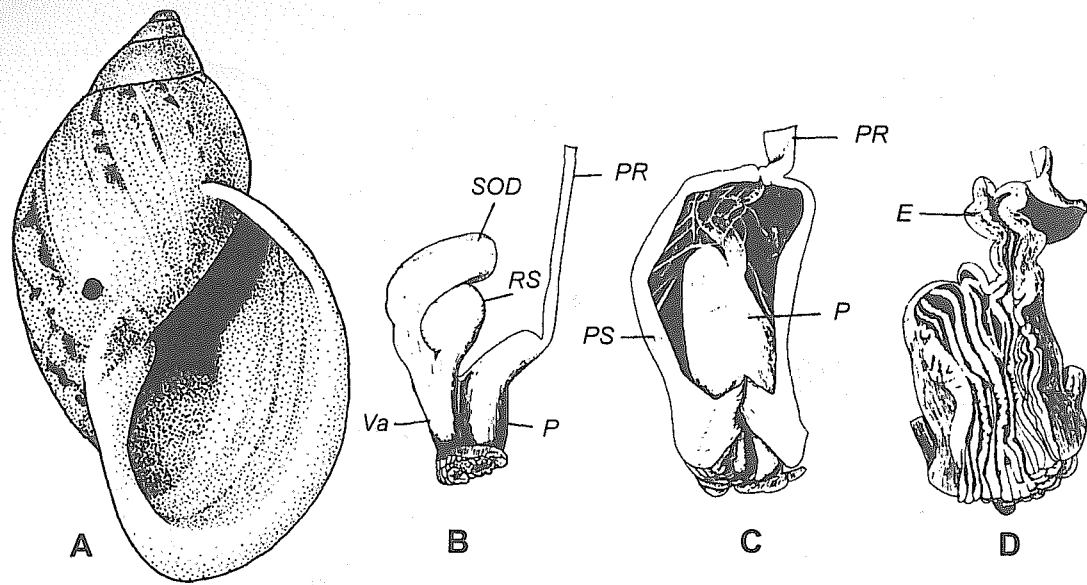


Fig. 439. A — *Aspastus (Callistocharis) malleatus* Jay, 1842.

Shell: "Viti-Ins." [Fiji]. Senck. No. 45621.

B, C, D — ! *Aspastus (Callistocharis) gracilis* (Broderip, 1841). B — distal section of reproductive tract. C — interior of penis sheath. D — interior of penis and epiphallus. After Kondo, 1948.

slightly convoluted longitudinal pilaster. Penial retractor attached apically. Atrial retractor strongly developed. Free oviduct not long, vagina much longer, thick-walled. Spermathecal stalk short, reservoir ovoid, partially embedded to basal section of spermo-oviduct.

DISTRIBUTION. Solomon Islands. 2 spp.

*Aspastus (Callistocharis) Pilsbry, 1900*  
Fig. 439

Pilsbry, 1900a: 102 (*Placostylus* sect.).

— *Charis* Albers, 1850: 152 (nom. praeocc., non Hübner, 1816 (Lepidoptera); *Bulimus* subg.; t.-sp. *Bulimus malleatus* Jay, 1842; SD Martens in Albers, 1860).

TYPE SPECIES — *Bulimus malleatus* Jay, 1842; OD.

Shell ovate, rather thin, of about 5 moderately convex whorls. Last whorl somewhat ascending because of expansion of aperture margin. Color white with brownish spots and markings. Early postembryonic whorls pitted and weakly radially wrinkled; two last whorls usually

malleated and coarser wrinkled. Aperture ample, ovate, slightly oblique, with thin, broadly reflexed margins; columellar margin dilate, with low lamella. Umbilicus narrow, deep. Height 30-72, diam. 16-35 mm (51.8 × 29.0 mm).

Vas deferens short, entering penis sheath at middle but running within sheath to open by simple pore apically into epiphallus. Penis sheath very thick-walled, enclosing tubular not convoluted epiphallus and conic penis. Epiphallus thick, connected with inner surface of sheath by heavy network of muscle fibres obscuring shape of epiphallus (most of fibres eliminated in fig. 439 C). Internally epiphallus with a few wrinkled folds. Inner surface of penis heavily rugose; some rugae wrinkled, others serpentine. Spermathecal shaft very short, reservoir globose.

DISTRIBUTION. Fiji islands. About 15 spp. & forms.

*Aspastus (Leucocharis) Pilsbry, 1900*  
Fig. 440

Pilsbry, 1900a: 21, 29, 67 (*Placostylus* sect.).

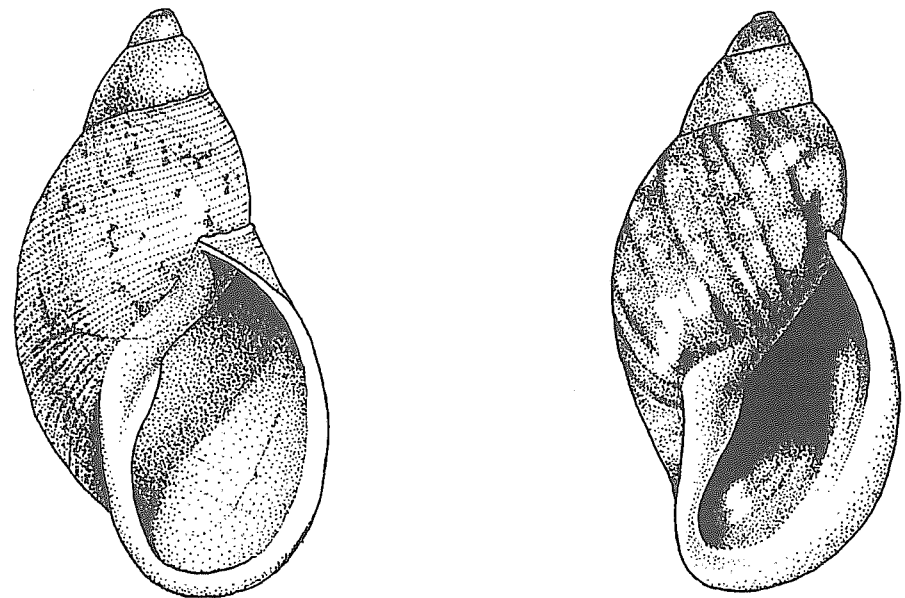


Fig. 440. *Aspastus (Leucocharis) pancheri* (Crosse, 1870).  
Boulari, New Caledonia. Lectotype. Paris.

Fig. 441. *Aspastus (Poecilocharis) rossiteri* (Hartman, 1889).  
New Hebrides, Aura Island. Senck. No. 9457.

TYPE SPECIES — *Bulimus pancheri* Crosse, 1870; OD.

Shell ovate-fusiform, rather thin, of about 4 rather convex whorls. Last whorl direct. Color greyish-white, uniform or with scattered translucent grey dots; columella sometimes orange-brown. Pitted sculpture irregular, occupying no more than 1.5 embryonic whorls. Postembryonic whorls with fine radial wrinkles and widely spaced, broad, shallow spiral grooves. Aperture oblong-ovate, subvertical, with moderately reflexed margins. Columellar margin with weak, oblique lamella. Umbilicus, a short slit. Height 29-36, diam. 13.0-16.5 mm (31.8 × 15.0 mm).

DISTRIBUTION. New Caledonia, Loyalty islands. 2 spp.

*Aspastus (Poecilocharis) Kobelt, 1891*  
Fig. 441

Kobelt, 1891: 79 (*Placostylus* subg.).

TYPE SPECIES — *Placostylus (Charis) hartmanni* Kobelt, 1891 (= *Charis rossiteri* Hartman, 1889); OD.

Shell ovate, thin, of 4.5-5 convex whorls. Last whorl direct. Coloration consists of dull-yellowish or brownish ground and reddish-brown radial irregular streaks or a few spiral bands. Early postembryonic whorls with weak spiral striae disappearing on body whorls. Aperture auriculate, with well reflexed margins; columellar margin thin, broadly dilate, with low, more or less distinct spiral lamella. Umbilicus semi-covered or closed. Height 30-40, diam. 16-21 mm (39.5 × 19.0 mm).

DISTRIBUTION. New Hebrides. 4-5 spp.

ORTHALICIDAE  
Martens in Albers, 1860

Martens in Albers, 1860: 209 (as Orthalicea).

— Liguidae Pilsbry, 1891: 317.

Shell large, elongated and slender to subglobose; usually not very solid, often with bright coloration. Embryonic whorls smooth, pitted or with vermiculate sculpture. Postnuclear sculpture not sharp, con-



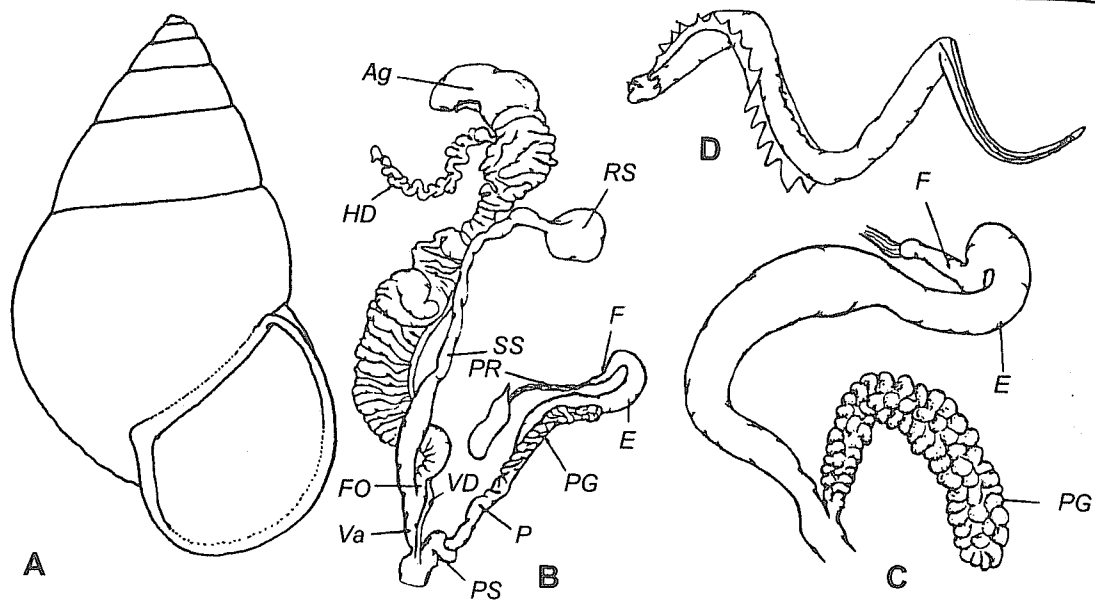


Fig. 442. *Aposcutalus atlanticus* Dutra et Leme, 1985.  
A — shell. B — reproductive tract. C — penis, enlarged. D — spermatophore. After Dutra & Leme, 1985.

sisting of radial wrinkles and, sometimes, spiral lines. Aperture without teeth.

Jaw consists of wide, converging plates, with distinct triangular area in middle. Inner structure of plates columnar.

Talon, a simple curvature of hermaphroditic duct. Penis slender, passing without external differentiation into long epiphallus terminating in flagellum. Penis mostly with accessory lateral gland. Penis sheath vestigial or absent. Genital atrium large.

DISTRIBUTION. Tropical America incl. Caribbean region. Mainly arboreal.

*Aposcutalus* Dutra et Leme, 1985  
Fig. 442

Dutra & Leme, 1985: 24.

TYPE SPECIES — *Scutalus (Aposcutalus) atlanticus* Dutra et Leme, 1985; OD.

Shell ovoid to fusiform, rather thin, translucent, of 6-6.5 slightly convex whorls. Color uniformly chestnut. Embryonic whorls smooth, with bulimuloid crest; subsequent whorls with characteristic vermiculate-granulate sculpture forming sort of network. Aperture ovate, moderately oblique, with thin, a little reflexed margins. Dimensions of holotype: 31.8 × 17.0 mm.

Vas deferens tightly adherent to penis. Epiphallus short, with terminal attachment of penial retractor. Penis long, with short sheath and strongly developed, sac-like, elongated gland of alveolar structure. Internally epiphallus and penis with broad longitudinal pilaster(s). Free oviduct and vagina short. Spermathecal stalk long, somewhat expanded, reservoir large, subglobular. Spermatophore with row of triangular spines.

DISTRIBUTION. Brazil, State of Parana. 1 sp.

REMARK. I place this genus in Orthalicidae because of presence of the above-mentioned gland on lower portion of penis despite the presence of penis sheath lacking in other Orthalicidae. I suggest that *Aposcutalus* is the most archaic representative of Orthalicidae, retaining primitive shell coloration and bulimulid penis sheath.

*Corona* Albers, 1850

Albers, 1850: 193 (*Achatina* subg.).

— *Paraliguus* Pilsbry, 1899: 176 ("There are several names similar to *Corona* ... in use in zoology. If the molluscan group-name be con-

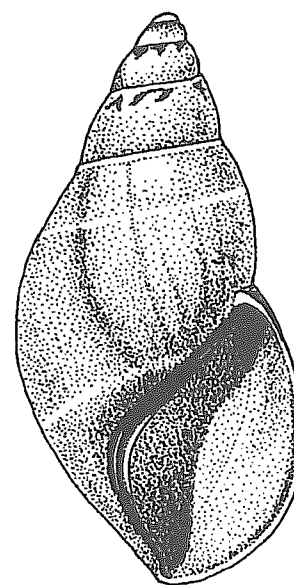


Fig. 443. *Corona (Hemibulimus) magnifica* (L. Pfeiffer, 1847).  
S Colombia. Senck. No. 90698 (as *excisus* Martens, 1885).

sidered preoccupied by any of them, it may be called *Paraliguus*").

TYPE SPECIES — *Helix (Cochlitoma) regina* Férussac, 1821; SD Martens in Albers, 1860.

Shell obesely-fusiform to elongated-conic, thin, of 5.5-7 slightly convex whorls. Color variable. Embryonic whorls finely regularly wrinkled, later with delicate radial striae and wrinkles, with or without spiral striation. Aperture elliptical, subvertical, with simple, a little thickened margins. Umbilicus absent.

DISTRIBUTION. Northern S America.

*Corona (Hemibulimus)* Martens, 1885  
Fig. 443

Martens, 1885: 175 (*Liguus* subg.).

TYPE SPECIES — *Liguus (Hemibulimus) excisus* Martens, 1885 (= *Achatina magnifica* L. Pfeiffer, 1847); OD.

Shell obesely-fusiform to elongated-conic, rather thin, dull or slightly glossy, of 5.5-7 moderately or scarcely convex whorls. Apex very obtuse. Color buff, variegated with green and chestnut flames; suprapraperipheral and subperipheral bands may

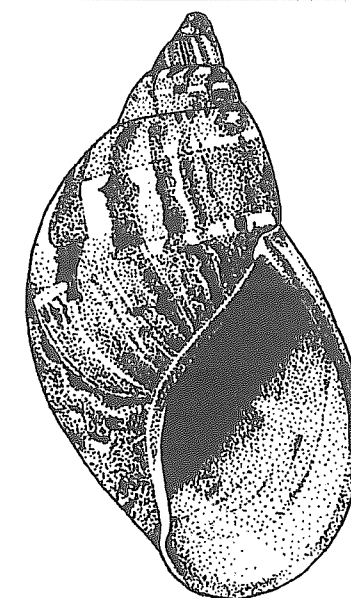


Fig. 444. *Corona (Myiorthalicus) dennisoni* (Reeve, 1848).  
Rio Aquacatal, Columbia. Senck. No. 155499

be present; aperture blue-white inside, columellar margin blackish. Postembryonic whorls lightly striatulate. Columellar margin slightly arched, subvertical, obliquely truncated at base. Height 44-50, diam. 21-26 mm (44.5 × 21.5 mm).

DISTRIBUTION. Ecuador, Colombia. 4-5 spp.

*Corona (Myiorthalicus)* Strebel, 1909  
Fig. 444

Strebel, 1909: 102, 114 (*Porphyrobaphe* subg.).

TYPE SPECIES — *Achatina dennisoni* Reeve, 1848; OD.

Shell fusiformly ovate, moderately thin, with rather acuminate spire, of 5.5-6 slightly convex whorls. Apex somewhat papillary. Coloration consists of creamy background and brown to blackish pattern of irregular streaks; columella pinkish. Postembryonic whorls with sort of network of crossing spiral and radial cords. Columellar margin arched, attenuately truncated. Height 65-85, diam. 34-42 mm (72.8 × 39.5 mm).

DISTRIBUTION. Colombia. 2-3 spp.

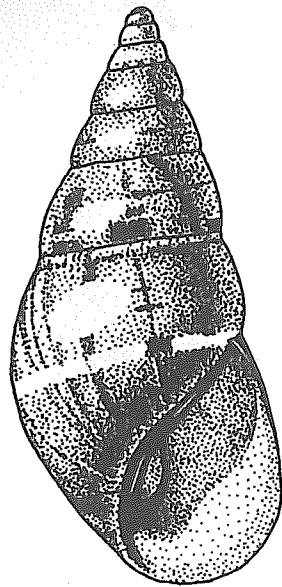


Fig. 445. *Corona (Corona) regina* (Férussac, 1821). "Amazon". Moscow No. Lc-15673.

*Corona (Corona) s. str.*  
Fig. 445

Shell dextral or sinistral, elongated-ovate, solid, shining, of 5.5-8.5 flattened whorls. Apex blunt. Coloration consists of corneous or pinkish background, dark or light peripheral band (sometimes absent) and often with short, brown, spiral streaks encircled with creamy; parietal and columellar walls blackish. Embryonic whorls smooth, polished. Later whorls finely, irregularly, radially wrinkled. Aperture broadly ovate, only slightly oblique, with simple margins. Columellar margin with strong vertically entering lamella. Umbilicus absent. Height 50-95, diam. 23-43 mm (92.7 × 41.6 mm).

DISTRIBUTION. Northern S America (Bolivia, Ecuador to Guiana). 2-3 spp.

*Corona (Melaniorthalicus)*  
Strebel, 1909  
Fig. 446

Strebel, 1909: 103, 173 (*Orthalicus* subg.).

TYPE SPECIES — *Achatina atramentaria* L. Pfeiffer, 1855;

Shell pointed-ovate or ovate-conic, mostly solid, shining, of 6-7 moderately convex whorls. Coloration consists of dark-yellow background and variously developed, irregular, blackish, sometimes zig-zagged, more or less diffuse streaks and spots; dark, often interrupted band(s) may be present. Parietal wall and aperture margins violet-black. Embryonic whorls with microscopic reticulated sculpture, postapical whorls with fine, dense, irregular, radial wrinkles. Aperture ovate, slightly oblique, with thin, simple margins. Columellar margin with variously developed, subvertical lamella. Umbilicus absent. Height 56-95, diam. 30-45 mm (57.0 × 31.2 mm).

Talon, a simple curvature of hermaphroditic duct. Vas deferens tightly adherent to vagina and penis. Flagellum rather long, tapering. Penis short, swollen, internally with short verge and many narrow longitudinal folds. Penial gland normally developed. Free oviduct and vagina very short. Spermathecal stalk subcylindrical, long, reservoir reaching albumen gland.

DISTRIBUTION. Colombia. 5 spp.

*Laeiorthalicus* Strebel, 1909  
Fig. 447

Strebel, 1909: 103 (*Orthalicus* subg.).

— *Laeorthalicus* Strebel, 1909: 180 (nom. err. pro *Laeiorthalicus* Strebel, 1909).

TYPE SPECIES — *Orthalicus (Laeiorthalicus) reginaeformis* Strebel, 1909; OD.

Shell sinistral, high-conic, moderately solid, of nearly 7 moderately convex whorls. Last whorl very slightly angulated. Apex blunt. Color corneous, with irregular radial streaks; aperture margins purple-brown. Embryonic whorls with vermiculate sculpture, later weakly radially wrinkled. Aperture irregularly ovate, moderately oblique, with sharp, simple margins. Columellar margin with thin spiral lamella. Umbilicus absent. Height 51-66, diam. 23-31 mm (66.0 × 30.4 mm).

Jaw typically orthalicid.

Talon exposed, subglobose. Flagellum moderately long. Epiphallus short. Penis somewhat swollen basally, internally with relief of oblique folds, converging to longitudinal furrow and consisting of rounded

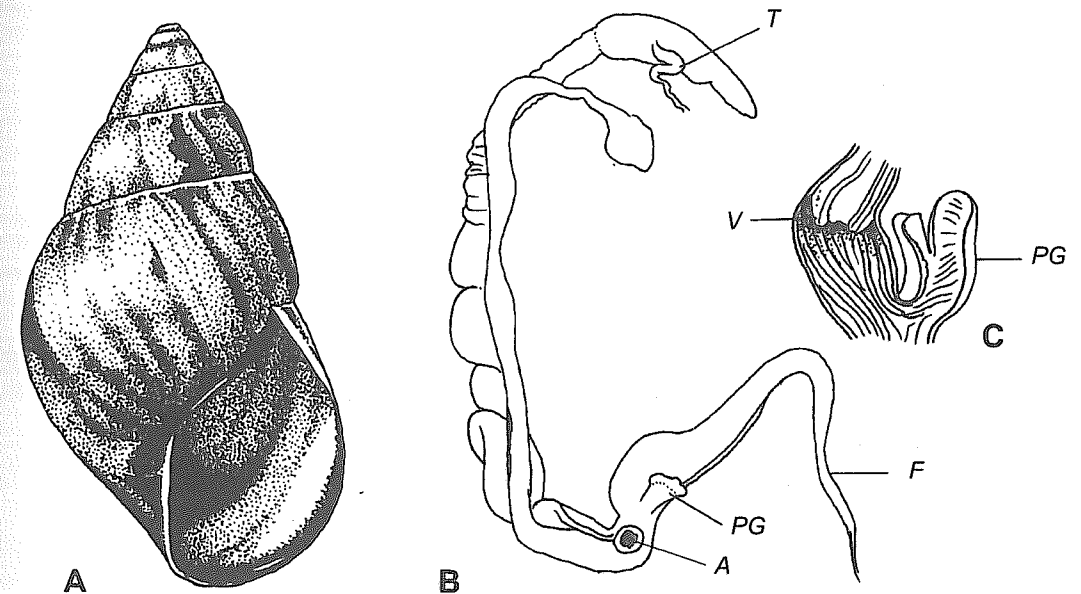


Fig. 446. *Corona (Melaniorthalicus) atramentaria* (L. Pfeiffer, 1855). A — shell: "Abajo de Soatá (Boyacá) y carretera al Rio Chicamocha, Columbia." Moscow No. Lc-21360 (Chicago No. 114131). B — reproductive tract. C — interior of penis. After Strebel & Pfeffer in Strebel, 1882.

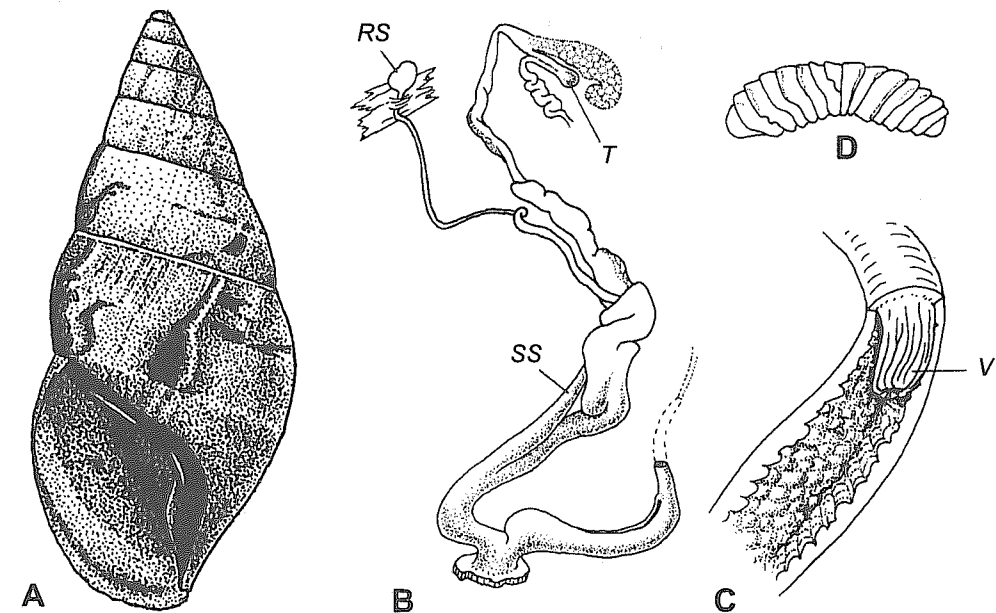


Fig. 447. *Laeiorthalicus reginaeformis* (Strebel, 1909). Tabatinga, Várzea (inundation forest), Amazonas, W Brazil, March 20, 1998. Subadult specimen. A — shell. B — reproductive tract. C — interior of penis. D — jaw. Moscow No. Lc-23722.

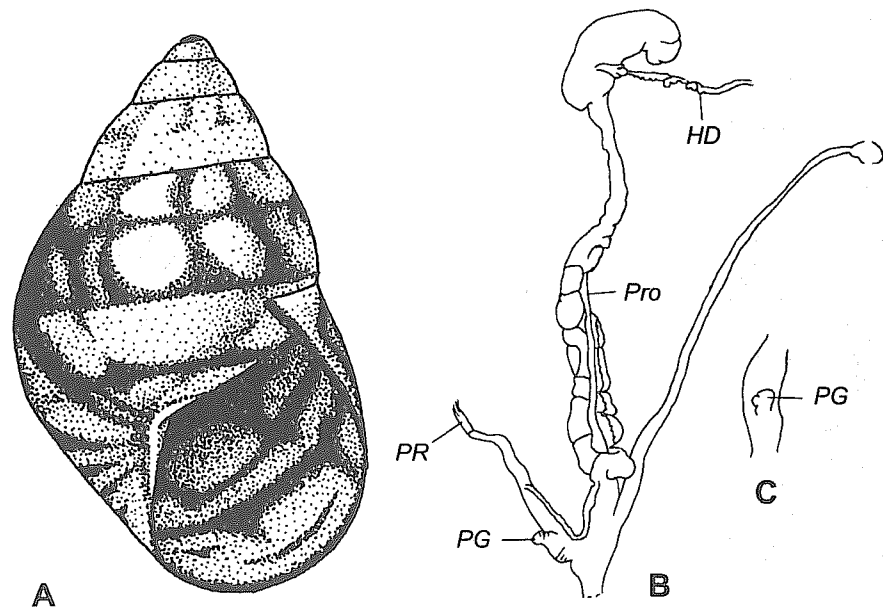


Fig. 448. ! *Orthalicus undatus* (Bruguière, 1789).  
A — shell: no data. Moscow No. Lc-15670. B — reproductive tract. C — lower portion of penis with gland, enlarged. After Breure & Schouten, 1985.

tubercles. Verge not long, with longitudinally grooved surface. Free oviduct rather long, vagina somewhat shorter. Spermathecal stalk thin, slightly enlarging toward base. Reservoir small, subglobose, fastened to floor of lung opposite to heart.

DISTRIBUTION. W Brazil. 1 sp.

REMARK. Up to date the type and only species has been known from a single specimen collected by Staudinger at "Rio Branco" and stored in the Berlin museum. I do not know if this specimen still exists (see remark to *Scholvenia*), but, judging by original description and figure, the specimen collected recently by S.I. Golovach (Fig. 447), belongs to this species, differing from the type mainly by larger size. Strebel (1909: 180) stated that "Es gibt nun sowohl in Bolivien wie in Brasilien und Paraguay einen Fluss dieses Namens [i.e. Rio Branco — A. Sch.]. The city Tabatinga is located at junction of borders of Brazil, Peru and Colombia.

*Orthalicus* Beck, 1837  
Fig. 448

Beck, 1837: 59.

— *Oxystyla* Schlüter, 1838: 7 (*Bulinus* subg.; t.-sp. *Bulinus undatus* Bruguière, 1789; monotypy).

— *Zebra* Shuttleworth, 1856: 60 (*Orthalicus* subg.; t.-sp. *Bulinus zebra* Müller, 1774; tautonymy).

— *Ortalichus* Martens, 1893: 179 (nom. err. pro *Orthalicus* Beck, 1837).

TYPE SPECIES — *Bulinus zebra* Müller, 1774; SD Hermannsen, 1847.

Shell pointed-ovate, rather thin, of 5-8.5 moderately convex whorls. Color usually yellowish, with irregular uneven dark radial streaks and bands. Embryonic whorls smooth, shining, later whorls finely radially wrinkled and often spirally striated. Aperture pointed-ovate, well oblique, with thin, simple margins. Columellar margin smooth or with very weak, vestigial spiral lamella. Umbilicus absent. Height 40-85, diam. 23-50 mm (47.0 × 27.2 mm).

Vas deferens short, adherent to vagina and penis. Flagellum and penis short, of about equal length. Penial gland small. Free oviduct and vagina short. Spermathecal stalk long, subcylindrical, reservoir small.

DISTRIBUTION. Tropical and Central America, West Indies, S Florida. About 10 spp.

REMARK. Breure & Schouten (1985: 55) regarded *Buccinum zebra* Müller, 1774 as nomen inquirendum.

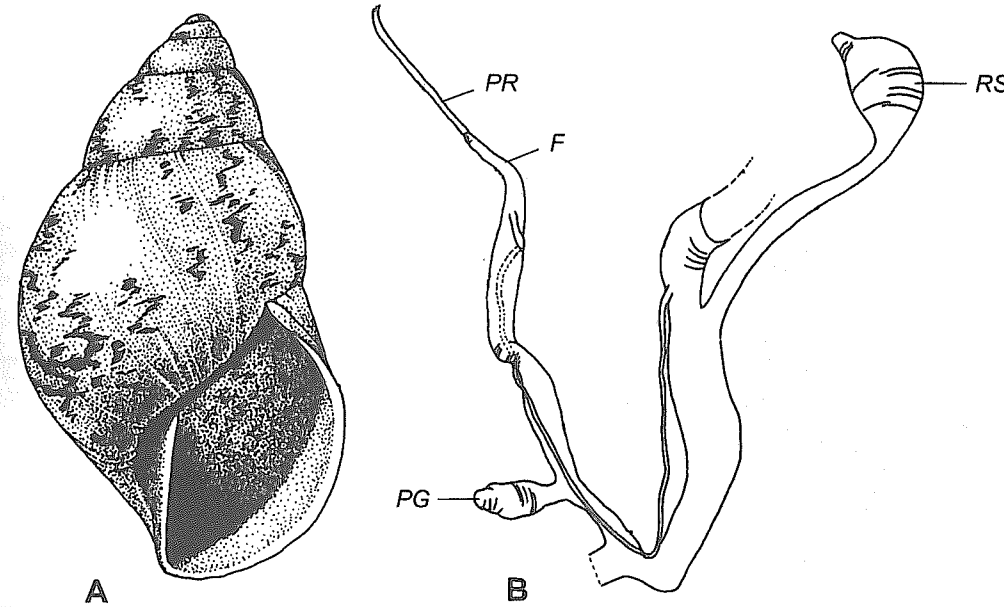


Fig. 449. *Porphyrobaphe (Porphyrobaphe) iostoma* (Sowerby, 1824).  
A — shell: La Laja, near Rio Macará, Peru. Phil. No. 165178. B — reproductive tract. After Breure & Schouten, 1985.

*Porphyrobaphe* Shuttleworth, 1856

Shuttleworth, 1856: 70.

TYPE SPECIES — *Bulinus iostomus* Sowerby, 1824; SD Martens in Albers, 1860.

Shell ovate-conic, generally solid, somewhat shining, of 5.5-6.5 whorls. Coloration consists of light background and variously developed pattern of zigzag streaks. Embryonic whorls smooth, later with radial and spiral sculpture. Aperture in general ovate, columellar margin straight, vertical. Umbilicus absent.

Penial gland well developed, spermathecal stalk shortened.

DISTRIBUTION. Peru, Ecuador, Colombia.

*Porphyrobaphe (Porphyrobaphe s. str.)*  
Fig. 449

Shell pointed-ovate, quite solid, of 5.5-6 moderately convex whorls. Coloration consists of whitish or light-corneous background and more or less developed pattern of dark spots or streaks which may be somewhat zigzagged. Aperture edges or only parietal wall usually black. Postem-

bryonic whorls with fine, crowded spiral lines and rather coarse radial wrinkles. Aperture broadly ovate to subcircular, margins slightly reflexed and thickened. Height 55-85, diam. 33-44 mm (63.0 × 35.3 mm).

Flagellum not long, tapering. Epiphallus and penis externally not demarcated. Penial gland with short stalk, weakly tuberculate. Free oviduct exceptionally short, vagina long and broad. Spermathecal shaft relatively short, subcylindrical; reservoir pointed-globose.

DISTRIBUTION. NW Peru, Ecuador. 2-3 spp.

*Porphyrobaphe (Oxyorthalicus)*  
Strebel, 1909)  
Fig. 450

Strebel, 1909: 102, 117.

TYPE SPECIES — *Bulinus irroratus* Reeve, 1849; OD.

Shell ovate-conic, moderately solid, of 6-6.5 slightly convex whorls. Color greenish-yellow to brown, with zigzagged darker pattern; aperture margins yellowish-orange or reddish, interior of aperture bluish-white or light-violet. Postnuclear whorls with



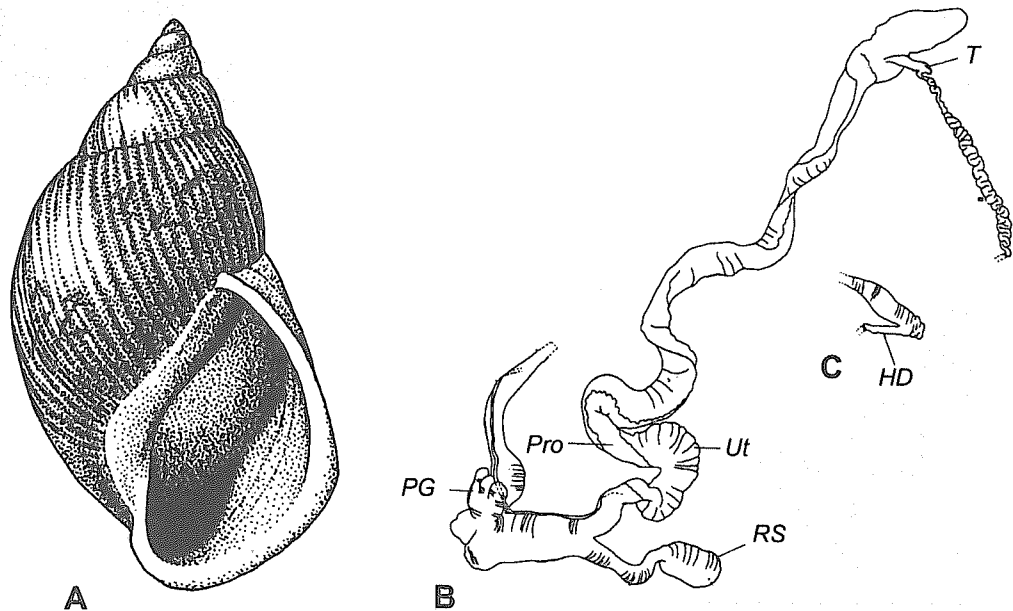


Fig. 450. *Porphyrobaphe (Oxyorthalicus) irrorata* (Reeve, 1849).  
A — shell: vicinity of Nanegal, Ecuador. Phil. No. 195218. B — reproductive tract. C — talon enlarged. After Breure & Schouten, 1985.

rough radial striation and variously developed spiral lines. Aperture irregularly ovate, with reflexed margins. Columellar margin with weak entering lamella. Height 60-80, diam. 34-43 mm (73.2 × 39.4 mm).

Talon exposed, clavate or subglobose. Vas deferens tightly bound to free oviduct, vagina and penis. Male ducts comparatively short. Epiphallus short, its walls contain few narrow cavities. Penial verge absent. Penial gland of 2 or 3 lobes. Free oviduct very short, vagina not long. Spermathecal stalk unusually short, reservoir elongated to globular, large to very large.

DISTRIBUTION. Ecuador, Colombia. 2 or 3 spp.

### *Sultana* Shuttleworth, 1856

Shuttleworth, 1856: 58 (*Orthalicus* subg.).

— *Orthalicus* Gray, 1847: 176 (nom. err. pro *Orthalicus* Beck, 1837).

— *Orthalicus* Pilsbry, 1899: 186 (non Beck, 1837; t.-sp. *Helix sultana* Dillwyn, 1817: OD).

TYPE SPECIES — *Helix sultana* Dillwyn, 1817; tautonymy.

Shell dextral or (rarely) sinistral, ovate, solid to thin, of 4.5-8 whorls. Presence of <-shaped color spots or lines is charac-

teristic. Embryonic whorls pitted or radially wrinkled. Spiral elements in postnuclear sculpture present. Columellar margin with variously developed lamella. Umbilicus absent.

Penis internally with short verge. Penial gland absent.

DISTRIBUTION. Bolivia, Peru, Ecuador, Colombia, NE Brazil, Guyana.

### *Sultana (Sultana s. str.)*

Fig. 451

Shell ovate, rather thin and fragile, of about 5 moderately convex whorls. Coloration consists of yellowish background and brown pattern of wavy radial streaks and 3 bands broken into <-shaped spots. Embryonic whorls minutely chequer-wisely pitted, later with microscopical granulation and wavy spiral lines. Aperture large, moderately oblique, with thin margins, columellar margin concave, with extremely delicate vertical lamella. Height 50-90, diam. 36-65 mm (55.2 × 38.0 mm).

Vas deferens adherent to penis but free from epiphallus. Flagellum slender, conic, longer than epiphallus. Penis swollen, internally with high, thin lamellae of transversal orientation; verge short, subglobose,

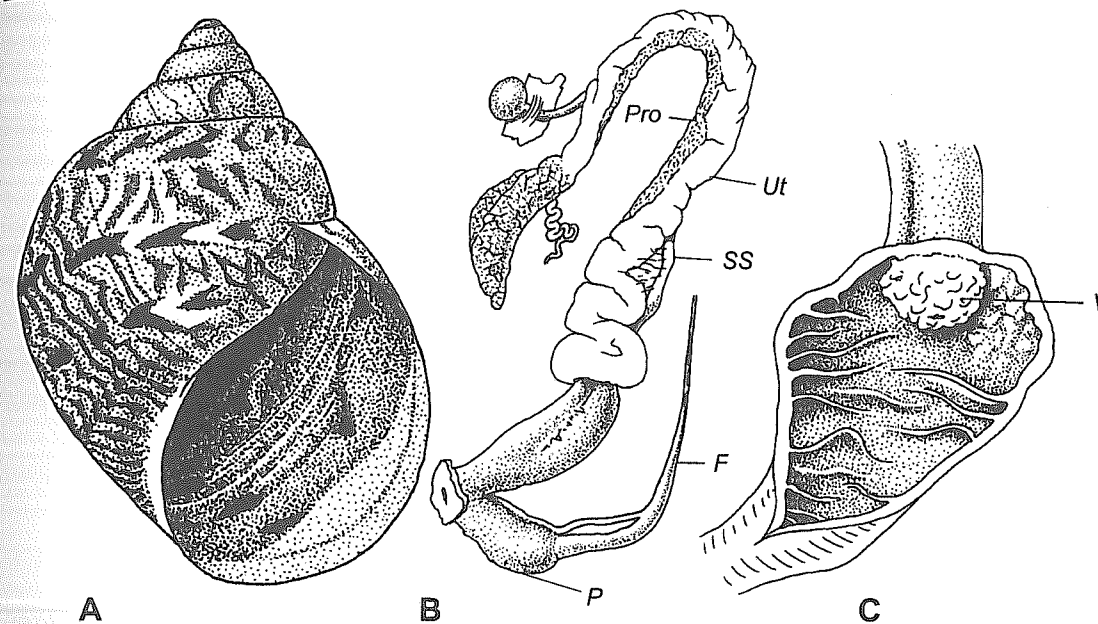


Fig. 451. *Sultana (Sultana) sultana* (Dillwyn, 1817).  
A — shell: Guyana. Phil. No. 26175. B, C — Tafelberg, distr. Saramacca, Surinam, July 1, 1973. B — reproductive tract. C — interior of penis. Leiden.

with tubercular surface; verge base with small area occupied by similar tubercles. Free oviduct somewhat longer than vagina. Spermathecal stalk long, cylindrical, with enlarged basal portion and small reservoir.

DISTRIBUTION. Bolivia, Peru, NE Brazil, Guyana. About 5 spp. with numerous forms.

### *Sultana (Metorthalicus) Pilsbry, 1899*

Fig. 452

Pilsbry, 1899: 187 (*Orthalicus* sect.).

TYPE SPECIES — *Bulimus yatesi* L. Pfeiffer, 1855; OD.

Shell high-conic, solid, shining, of 5-8 slightly convex whorls. Color yellow to yellow-olivaceous, with brown pattern of characteristic sinuous streaks. Embryonic whorls with clear radial wrinkles, turning into sort of zigzag figures on later whorls. Aperture ovate, (sub)vertical, with thickened margins; columellar margin vertical, with low but quite distinct 1 or 2 oblique lamellae. Height 60-85, diam. 28-36 mm (68.2 × 31.3 mm).

DISTRIBUTION. Peru, Ecuador. 4 spp. & several forms.

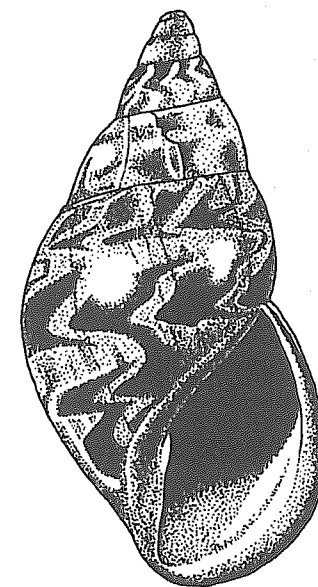


Fig. 452. *Sultana (Metorthalicus) yatesi* (L. Pfeiffer, 1855).  
Molinopampa, Dept. Amazonas, Peru. Chicago No. 16561.



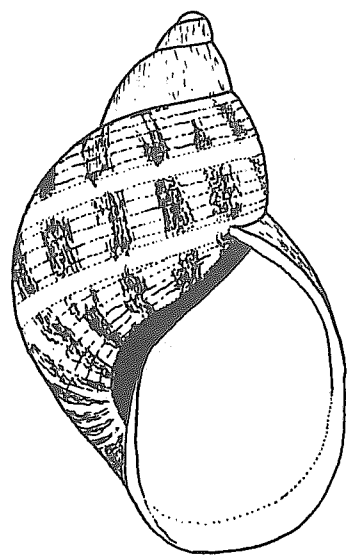


Fig. 453. *Clathrorthalicus wallisi* (Strebel, 1909). After Strebel, 1909.

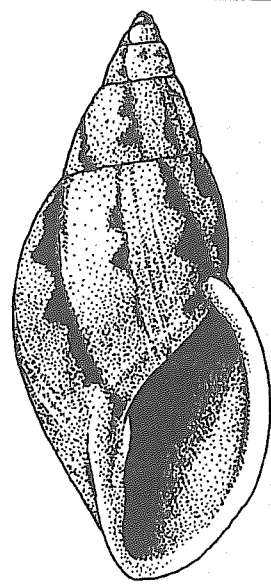


Fig. 454. *Trachyorthalicus fraseri* (L. Pfeiffer, 1858). Buenos Aires (Bagua Grande), Dpto Amazonas, Peru. Chicago No. 200921.

*Clathrorthalicus* Strebel, 1909  
Fig. 453

Strebel, 1909: 102, 150 (*Orthalicus* subg.).

TYPE SPECIES — *Orthalicus wallisi* Strebel, 1909; OD.

Shell ovate-conic, thin, of 4.5-5 slightly convex whorls. Color of early whorls uniformly light-pink, later yellowish or greyish-brown, with dark radial streaks interrupted by 2-3 light bands; parietal wall dark-brown, aperture pink inside. Embryonic whorls pitted, postnuclear with fine oblique wrinkles and delicate spiral lines. Aperture ovate, ample, with shortly reflexed margins. Height 48-65, diam. 27-31 mm.

DISTRIBUTION. Ecuador, Colombia. 1-2 spp.

*Trachyorthalicus* Strebel, 1909  
Fig. 454

Strebel, 1909: 103, 151 (*Orthalicus* subg.).

TYPE SPECIES — *Bulimus fraseri* L. Pfeiffer, 1858; OD.

Shell ovate-fusiform, rather solid, shining, of 5.5-7 a little convex whorls. Ground

color creamy, with dark-brown pattern of irregular radial streaks; columellar margin sometimes with violet tint. Embryonic whorls finely pitted, later look smooth, with weak spiral lines and vague radial striae. Aperture ovate, with thickened and slightly reflexed margins; columellar margin truncated below, with smoothed obliquely ascending lamella. Umbilicus closed or in form of minute crack. Height 70-100, diam. 30-42 mm (71.0 × 31.2 mm).

DISTRIBUTION. Peru, Ecuador. About 5 spp. & forms.

*Liguus* Montfort, 1810

Montfort, 1810: 422.

TYPE SPECIES — *Bulla virginea* Linnaeus, 1758; monotypy.

Shell oblong-conic, rather thin to solid, glossy. Coloration usually bright, primarily composed of white or yellow background and darker spiral bands; sometimes bands so broad that form background. Embryonic whorls smooth or with a few spiral bands of radial wrinklets. Subsequent whorls weakly sculptured. Aperture comparatively small, with acute, unexpanded margins. Umbilicus absent.

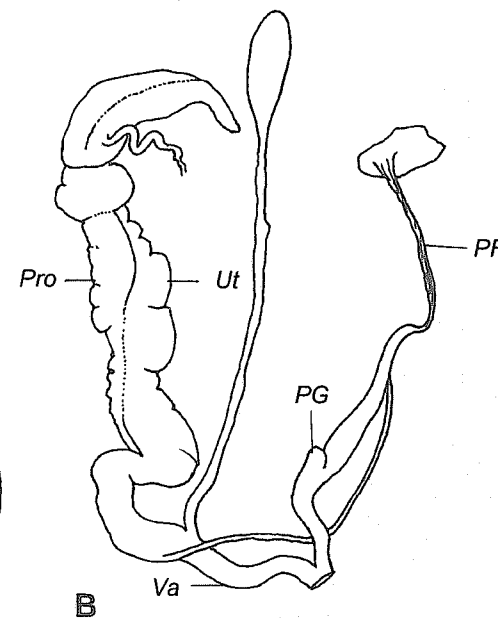
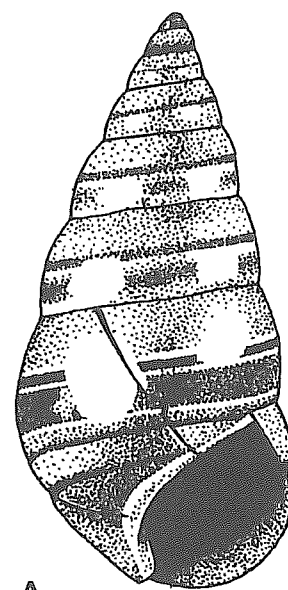


Fig. 455. *Liguus (Liguus) virgineus* (Linnaeus, 1758). A — shell: Haiti. Moscow No. L-1318. B — reproductive tract. After Semper, 1877.

Flagellum comparatively long with terminal retractor, inserted on diaphragm. Penis slender; penial gland of 2 or several lobes, and either sessile or on short stalk. Vagina moderately long. Spermathecal stalk long, subcylindrical, reservoir ovate, lodged near heart.

DISTRIBUTION. Haiti, Cuba, Florida. Arboreal mollusks.

*Liguus (Liguus s. str.)*  
Fig. 455

— *Chersina* Beck, 1837: 74 (*Achatina* subg.; non Gray, 1831 nec Férussac, 1821; t-sp. not designated).

— *Pseudotrochus* Mörch, 1852: 21 (t-sp. *Bulla virginea* Linnaeus, 1758; monotypy).

— *Liguus* Nevill, 1878: 200 (non Gray, 1834; t-sp. *Bulla virginea* Linnaeus, 1758; OD).

— *Ilotia* L. Pfeiffer, 1881 (1878-1881): 260 (in synonymy of *Liguus virgineus*: "*Ilotia virginea* et *puellaris* Bolt.").

Shell quite solid, shining, of 7-8 slightly convex whorls. Coloration consists of white or yellow background and 1-7 spiral bands of various width and color (green, orange, violet, chestnut, reddish); parietal and

columellar walls usually pink. Both embryonic and later whorls smooth, without regular sculpture. Aperture widely ovate, oblique, with simple margins. Height 36-58, diam. 18-30 mm (48.0 × 22.6 mm).

Talon hidden. Vas deferens not bound to penis. Penial gland sessile.

DISTRIBUTION. Haiti. 1 sp.

*Liguus (Liguellus* Clench, 1946)  
Fig. 456

Clench, 1946: 123.

TYPE SPECIES — *Achatina vittata* Swainson, 1822; OD.

Shell dextral or sinistral, solid, of about 7 rather convex whorls. Coloration consists of white to ivory background and 3 narrow brown to nearly black bands; upper sometimes lighter; aperture inside pink; violet zone around umbilical area may be present. Embryonic whorls smooth, shining. Postembryonic surface weakly radially striated. Aperture semilunate, moderately oblique, with slightly thickened margins. Columellar margin subvertical, not truncated, with light callose thickening. Height 38-48, diam. 16-20 mm (38.0 × 17.0 mm).

DISTRIBUTION. E Cuba. 1 sp.

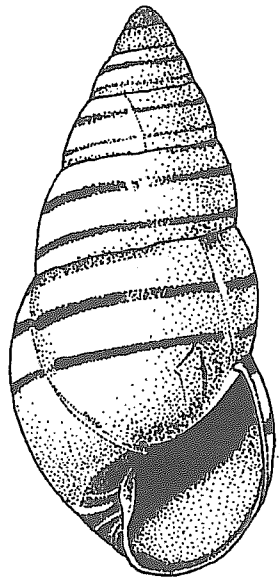


Fig. 456. *Liguus (Liguellus) vittatus* (Swainson, 1822).  
La Vigia, Ensenada de Mora, Oriente Prov., Cuba. Cardiff.

*Liguus (Oxystrombus) Mörch, 1852)*  
Fig. 457

Mörch, 1852: 21.

— *Orthalicinus* Fischer et Crosse, 1875: 436 (t.-sp. *Buccinum fasciatum* Müller, 1774; OD).

TYPE SPECIES — *Buccinum fasciatum* Müller, 1774; monotypy.

Shell comparatively thin, of 6-8 slightly to moderately convex whorls. Coloration strongly variable (see Pilsbry, 1946b: 39). Embryonic whorls smooth or with more or less developed sculpture of a few spiral bands of radial wrinklets. Postembryonic whorls with widely spaced spiral lines. Columellar margin of aperture may be either thick, more or less obliquely truncated, or thin, continuous, with intermediate variants. Height 35-75, diam. 17-35 mm (Paris — 61.0 × 29.2 mm; Moscow — 52.3 × 25.2 mm).

Talon exposed, short, blunt. Vas deferens closely bound to penis, open through pore located on tip of short, conic verge. Penis internally with weak, irregular, more or less longitudinal folds. Penial gland on short stalk, of several lobes, its inner surface covered with irregular pattern of short folds.

DISTRIBUTION. Cuba, Florida. Probably 1 sp. with numerous (about 50) subsp. or forms.

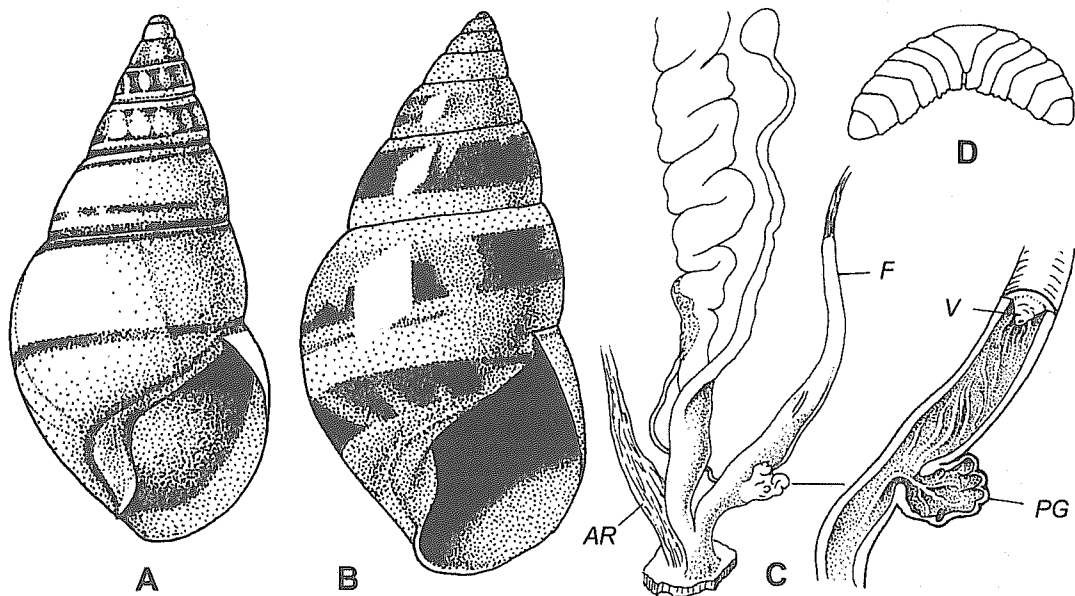


Fig. 457. *Liguus (Oxystrombus) fasciatus* (Müller, 1774).  
A — shell: Cuba. Paris. B, C, D — Escaleras de Jaruco near Habana, Cuba, April 2, 1981.  
B — shell. C — reproductive tract and interior of penis. D — jaw. Subadult specimen. Moscow No. Lc-23735.

MEGASPIRIDAE Pilsbry, 1904

Pilsbry, 1904 (1903-1904): 175.

Shell not decollated, cylindrical-tapering, solid, many-whorled. Last whorl direct, without basal keel. Color olivaceous, monochromatic or with vague brownish streaks. Embryonic whorls almost smooth, finely radially striated or with tuberculate sculpture; later whorls obliquely rib-striated. Aperture small, rounded, slightly oblique; peristome incomplete, its insertions widely remoted. Aperture margins narrowly expanded. Columella with 1 simple lamella or with 2 or 3 low emerging lamellae, median (true columellar) passing nearly to apex, enlarged and scalloped in several of latest whorls; other 2 lamellae enter less deeply, and relatively inconspicuous. 3 or 4 last whorls sometimes further obstructed within by series of laminae radiating from columella upon basal wall. Umbilicus, a minute perforation.

DISTRIBUTION. Brazil.

*Megaspira* Jay, 1836

Fig. 458

Jay, 1836: 39.

— *Pyrgelix* Beck, 1837: 88 (t.-sp. *Pyrgelix elata* [= *elator*] Spix, 1837; monotypy).

TYPE SPECIES — *Megaspira ruschenbergiana* Jay, 1836; monotypy.

Shell cylindrical-tapering, solid, many-whorled (up to 24 narrow whorls). Apex obtuse. Color olivaceous, with vague brownish streaks. Embryonic whorls almost smooth or finely radially striated; later whorls obliquely rib-striated. Aperture small, rounded, slightly oblique; peristome incomplete, lip insertions widely remoted. Aperture margins narrowly expanded. Parietal lamella running for several whorls; columella with 2 or 3 low emerging lamellae, median (true columellar) passing nearly to apex, enlarged and scalloped in several latest whorls; other 2 lamellae (supra- and sub-columellar) enter not so deep. 3 or 4 last whorls further with series of laminae radiating from columella upon basal wall, at intervals of 1/3 whorl. Umbilicus, a minute perforation. Height 35-66, diam. 5.5-12.5 mm (65.7 × 12.5 mm).

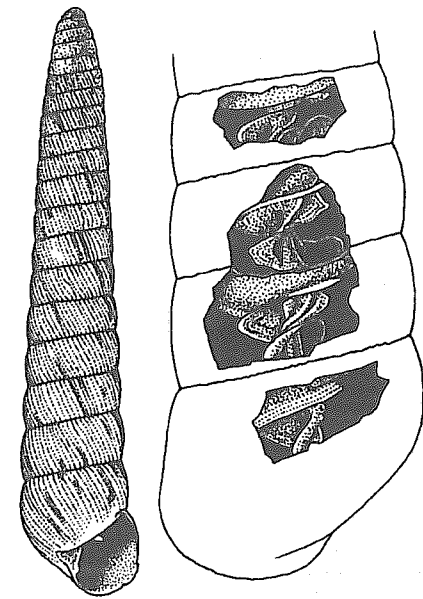


Fig. 458. *Megaspira ruschenbergiana* Jay, 1836. Brazil. Moscow No. Lc-23728.

DISTRIBUTION. Central-southern Brazil. 5 spp. & subsp.

? *Callione pion*

Pilsbry et Vanatta, 1899

Fig. 459

Pilsbry & Vanatta, 1899: 371.

TYPE SPECIES — *Callione pion iheringi* Pilsbry et Vanatta, 1899; OD.

Shell turritid, slowly tapering, moderately solid, of about 10 moderately convex whorls. Color yellowish-olive. Embryonic whorls (about 2.5) with conspicuous diamond-granulate sculpture of very regular rounded tubercles. Subsequent whorls with more or less regular radial wrinkles and weak spiral striae which more accented on two last whorls. Aperture irregularly ovate, with slightly expanded margins; columellar margin reflexed, dilated, with low, oblique lamella, continuing inward last whorl as cord-like spiral thickening. Umbilicus, a minute rim. Height 23.5-24.2, diam. 7.0 mm (24.2 × 7.0 mm).

Talon large, composed of thick curved

basal portion and slightly longer, narrow terminal part. Vas deferens inserted at boundary between flagellum and epiphallus. Flagellum rather long, enlarged. Epiphallus slightly narrower, of about same length as flagellum. Penis rather short. Penial retractor attached to flagellum apically. Free oviduct exceptionally short. Vagina not long. Spermathecal shaft moderately long, reservoir globular.

Probably oviparous.

DISTRIBUTION. São Paulo (S Brazil). 1 sp.

REMARK. *Callionepion* essentially differs from *Megaspira* in a number of important conchological characters (embryonic and postembryonic sculpture, structure of columella), so I am not sure that these taxa belong to the same family. The anatomy of *Megaspira* is unknown. Judging by the anatomy of *Callionepion*, it may be an aberrant representative of Bulimulidae or Subulinidae.

#### UROCOPTIDAE Pilsbry, 1898

Pilsbry, 1898: 107.

— *Cylindrellidae* Tryon, 1867: 311 [based on *Cylindrella* L. Pfeiffer, 1840.

Shell often decollated, cylindrical, turritid-conic, fusiform or high-conic (in one genus discoidal), usually of many narrow whorls, thin to very solid. Last whorl mostly adnate or free. Color uniformly whitish to chestnut or variegated, rarely with spiral dark bands. Apical whorls, when present, mostly smooth, sometimes finely radially ribbed. Postnuclear whorls mostly radially ribbed. Aperture generally entire, with reflexed and often thickened margins, usually small, circular or squarish. Columella hollow or solid, simple or with 1-8 lamellae which may be smooth, denticulate, serrate, or of complex structure.

Jaw thin, nearly smooth to vertically striated, or of converging plates, with median triangular area.

Kidney narrow, wedge-shaped, about as long as pericardium. Secondary ureter incomplete to closed.

Distal genitalia without additional organs (flagellum may be present). Spermathecal shaft long, with or without diverticle.

DISTRIBUTION. Caribbean region and adjacent mainland areas from Florida

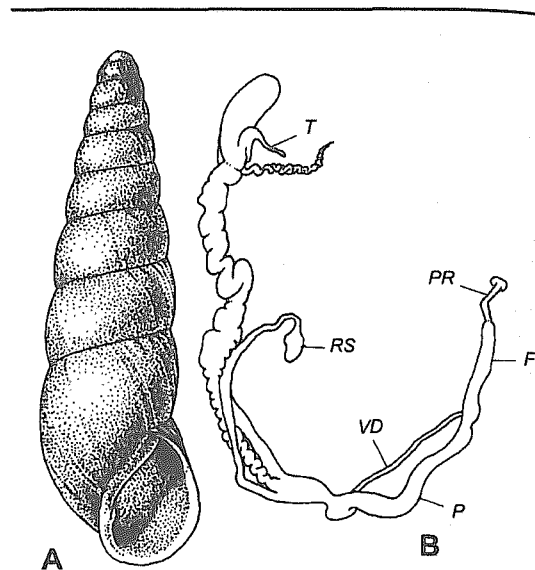


Fig. 459. *Callionepion iheringi* Pilsbry et Vanatta, 1899.

A — shell: Piquete, São Paulo, Brazil. Holotype. Phil. No. 71258. B — reproductive tract. After Pilsbry, 1904 (1903-1904).

through the Gulf Coast states of the U.S.A. and Central America to the north coast of S America. One species in NE Australia (Queensland).

REMARK. According to Opinion 1030 [Bull. Zool. Nomenclature, 1974, 31(4): 190] the generic name *Cylindrella* Swainson, 1840 is suppressed. However, the same Opinion does not mention the generic name *Cylindrella* of Pfeiffer, 1840; the family name *Cylindrellidae* Tryon, 1868 is based on Pfeiffer's name and the name *Cylindrellidae* as so is available. At the same time the name *Cylindrella* Pfeiffer, 1840 is a junior synonym of *Urocoptis* Beck, 1837; besides in this century the name *Cylindrellidae* nearly has not been used. Meanwhile the name *Urocoptidae* has been used hundreds of time. Taking into consideration the principle of stability of nomenclature, I retain the name *Urocoptidae*.

The current system of *Urocoptidae* developed by Jaume & Torre (1972, 1976) is mainly based upon the structure of radular teeth and columella. As it was pointed out earlier (p. 3), I think that characters of

radular teeth reflect predominantly the dietary specialization, and cannot be widely used in higher taxonomy. On the other hand, conchological characters, along with peculiarities of reproductive tract, may provide a good basis for the system and phylogeny of *Urocoptidae*.

#### MICROCERAMINAE Pilsbry, 1904

Pilsbry, 1904 (1903-1904): 151.

— *Macroceraminae* Jaume et Torre, 1972: 1528.

— *Johanicerminae* Jaume et Torre, 1972: 1647.

Paul, 1983: 27.

Shell not decollated, medium-sized, conic to conic-fusiform. Aperture incomplete. Columella solid, simple or with spiral lamella. Parietal, basal or palatal lamellae absent. Umbilicus absent.

Jaw strongly arched, delicate, composed of many thin, narrow, slightly imbricated, converging plates.

Penis short, internally with longitudinal pilasters. Epiphallus absent or short. Penial retractor present or absent. Flagellum absent. Spermathecal stalk without diverticle.

DISTRIBUTION. Central America, Texas, S Florida, Cuba, Jamaica, Haiti, Bahama Islands.

REMARK. Jaume & Torre (1972) have erected the subfamily *Johaniceraminae* for the genus *Johaniceramus*, with diagnosis as follows: "In this subfamily the radula is typically *Macroceramid* but the nuclear sculpture is *microceraminid*, that is, it is axially ribbed. The columella bears weak fold" (cit. after Jaume & Torre, 1976: 121). I do not agree with such a decision: all the genera included here in the subfamily *Microceraminae* form a well-defined conchological assemblage, and the structure of reproductive apparatus of *Microceramus* and *Macroceramus* is too similar to separate them at a subfamily level.

#### *Microceramus* Pilsbry et Vanatta, 1898 Fig. 460

Pilsbry & Vanatta, 1898: 281 (*Macroceramus* subg.).

— ?*Colobus* Albers, 1850: 177 [nom. praeocc., non Illiger, 1811 (Reptilia); *Bulimus* subg.; t.-sp. not designated].

TYPE SPECIES — *Macroceramus floridanus* Pilsbry, 1898 (? = *Pupa pontifica* Gould, 1848); OD.

Shell high-conic, rather thin, of 7.5-13 convex whorls. Last whorl with or without weak basal keel. Coloration of brown or corneous spots and streaks on whitish background; positive elements of sculpture usually lighter. Embryonic whorls with rather distantly spaced radial wrinklets, later obliquely ribbed or rib-striated. Aperture irregularly round, with shortly reflexed, thin margins. Columella slender, solid, straight. Umbilicus absent, though umbilical depression present. Height 6-18, diam. 2.5-8.0 mm (9.8 × 4.0 mm).

Talon exposed, with enlarged basal portion and elongated apical process. Vas deferens short, somewhat convoluted, entering penis apically through simple pore. Penis ovate, with sheath attached at both ends, internally with a few longitudinal, branching folds and short but high elongated pilaster at upper part. Penial retractor inserts onto penis apically. Free oviduct rather long, vagina as such practically absent since spermathecal stalk entering atrium opposite to penis. Reservoir small.

DISTRIBUTION. Central America, Texas, S Florida, Cuba, Jamaica, Haiti, Bahama Islands. About 20 spp.

#### *Spiroceramus* Pilsbry et Vanatta, 1898 Fig. 461

Pilsbry & Vanatta, 1898: 281 (*Macroceramus* subg.). Clench, 1967: 1.

TYPE SPECIES — *Macroceramus amplus* L. Pfeiffer, 1858; OD.

Shell high-conic, rather thin, translucent, of 9-10 quite convex whorls. Last whorl without basal keel. Color corneous or brown. First 0.5 whorl smooth, other embryonic whorls delicately costulate, postnuclear whorls with distantly spaced ribs. Aperture ovate, oblique, with thin, narrowly expanded margins. Columella thin, solid, with wide, strong, spiral lamella, median in each whorl. Umbilicus closed. Height 4.5-15.1, diam. 1.8-4.8 mm (4.5 × 2.0 mm).

DISTRIBUTION. Cuba. 4 spp.



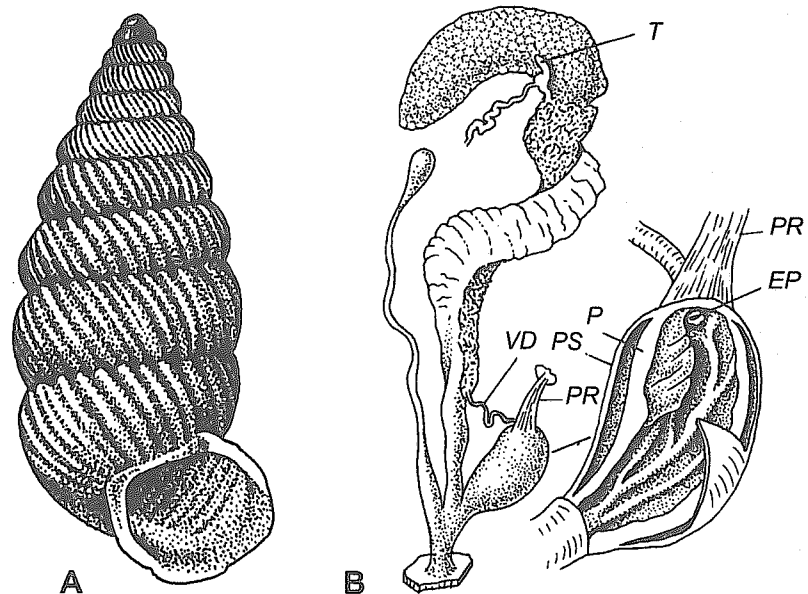


Fig. 460. ! *Microceramus pontificus* (Gould, 1848).  
A — shell: Orizaba, Mexico. Leiden. B — reproductive tract and interior of penis: Key Largo, Dade Co., Florida, July 1981. Chicago No. 218599.

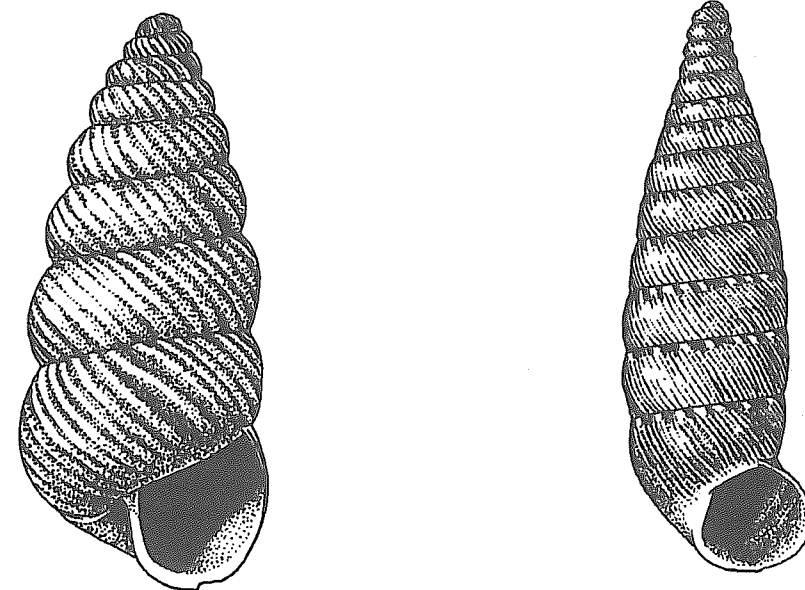


Fig. 462. *Pineria beathiana* Poey, 1854.  
Pinos Island, Cuba. Geneva.

Fig. 463. *Johaniceramus longus* (Henderson, 1915).  
Cubitas Mts., Cuba. Holotype. Phil. No. 111447a.

*Pineria* Poey, 1854  
Fig. 462

Poey, 1854: 428.

— ? *Pseudopineria* Aguayo, 1938: 73 (t.-sp. *Bulimus vieguensis* L. Pfeiffer, 1856; OD).

TYPE SPECIES — *Pineria beathiana* Poey, 1854; SD Martens in Albers, 1860.

Shell cylindrical-tapering or conic, rather thin, of 6-9 convex to very convex, sometimes carinate whorls. Color corneous, ribs whitish. Embryonic whorls finely radially costulate. Later whorls with rounded, regular, oblique ribs. Aperture rounded, subvertical to oblique, with thin, hardly expanded margins. Columella thin, slightly sinuous. Umbilicus closed. Height 4-7, diam. 2.3-4.0 mm (4.6 × 2.5 mm).

DISTRIBUTION. Caribbean region (Pinos, Vieque, St. Martin, St. Bartolomew, Anguilla, Guadeloupe, Barbados, Bonaire Islands). 4-5 spp. & forms.

*Johaniceramus* Jaume et Torre, 1972  
Fig. 463

Jaume & Torre, 1972: 1648; 1976: 122.

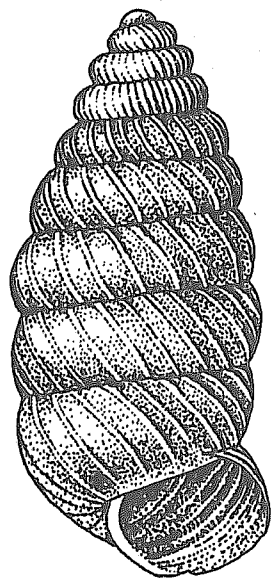


Fig. 461. *Spiroceramus amplus barbouri* Aguayo, 1935.  
Curva de la Campana, Gibara, Oriente, Cuba. Phil. No. 165655.

TYPE SPECIES — *Microceramus longus* Henderson, 1915; OD.

Shell cylindro-conic, moderately solid, of about 14 slightly convex whorls. Last whorl without basal keel. Color corneous, with darker, narrow subsutural band, interrupted by white nodules. Embryonic whorls finely but distinctly radially ribbed; subsequent whorls with smoothed, partly whitish ribs. Aperture irregularly subcircular, with simple margins. Columella slightly twisted, nearly simple, with only weak lamella. Height 10-13, diam. 3.2-3.7 mm (12.0 × 3.5 mm).

DISTRIBUTION. Cuba. 1 spp. with 4 subspp.

*Macroceramus* Guilding, 1828  
Fig. 464

Guilding, 1828: 168.

— *Leptospira* Swainson, 1840: 335 (part.; t.-sp. *Macroceramus signatus* Guilding, 1828; designated here).

— ? *Colobus* Albers, 1850: 177 [nom. praeocc., non Illiger, 1811 (Reptilia); *Bulimus* subg.; t.-sp. not designated].

TYPE SPECIES — *Macroceramus signatus* Guilding, 1828; monotypy.

Shell conic-turritid to oblong, tapering above, moderately thin, of about 9-14 variously convex whorls. Last whorl with or without basal keel. Coloration consists of whitish or yellowish background and conspicuous brown pattern; apex dark-chestnut. Embryonic whorls smooth, later with indistinct, smoothed radial wrinkles and weak malleation. Aperture rounded, subvertical, with simple or scarcely reflexed margins. Columella slender, solid, straight or somewhat twisted spirally. Umbilicus, a minute rim, or nearly closed. Height 7-19, diam. 3-8 mm (16.3 × 6.7 mm).

Talon well developed, subtubular, on inner curvature of albumen gland. Vas deferens rather short, convoluted, entering very short epiphallus apically. Penis bulky, thin-walled, internally with many scattered, short, thin folds and high, horse-shoe-like pilaster at upper portion. Penial retractor not found. Free oviduct rather long, vagina much shorter. Spermathecal stalk long, cylindrical, reservoir small, lying on lower por-



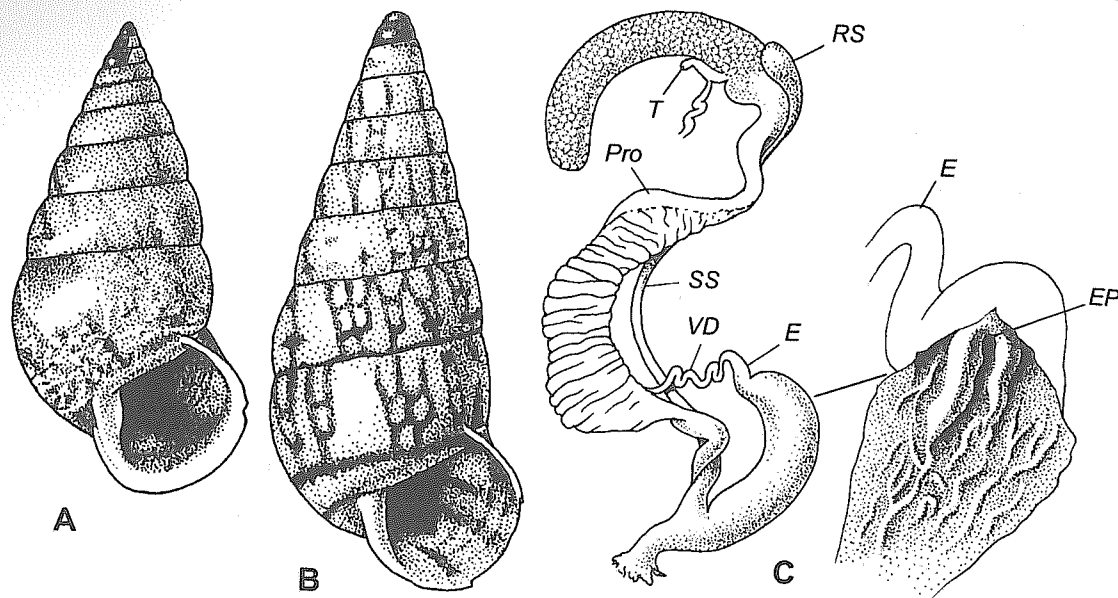


Fig. 464. A — ! *Macroceramus hendersoni* (Torre, 1909). Shell: Sierra de Cubitas, Camagüey, Cuba. Syntype. Phil. No. 98894. B, C — *Macroceramus signatus* Guilding, 1828. B — shell: Tatola (Antilles). Paris. C — reproductive tract and interior of penis: Interior of Aneгада, Virgin Islands. Chicago No. 151675.

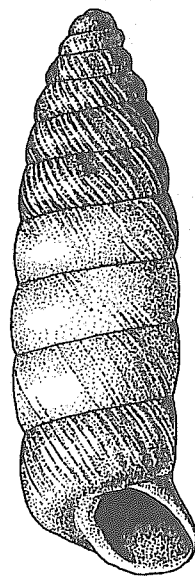


Fig. 465. *Insulaceramus greenwayi* (Clench, 1967). Foxtown, Little Abaco Island, Bahamas. Holotype. Cambridge No. 116688.

tion of albumen gland and upper portion of spermoviduct.

DISTRIBUTION. E Cuba, Haiti, Puerto Rico. About 25 spp. with several forms.

#### *Insulaceramus* Clench, 1967

Fig. 465

Clench, 1967: 5 (*Spiroceramus* subg.).

TYPE SPECIES — *Spiroceramus* (*Insulaceramus*) *greenwayi* Clench, 1967; OD.

Shell cylindrical, with conic upper part, rather thin, of 11 whorls; upper convex, lower flattened. Color corneous, positive elements of sculpture locally whitish. Embryonic whorls finely radially wrinkled, upper postnuclear whorls regularly ribbed; riblets obsolete on cylindrical part of shell. Columella thin, simple, a little twisted. Aperture small, subcircular, well oblique, with simple, slightly thickened margins. Umbilicus absent. Height 6.4-6.7, diam. 1.0-1.9 mm (6.4 × 1.9 mm).

DISTRIBUTION. Bahama Islands. 2 spp.

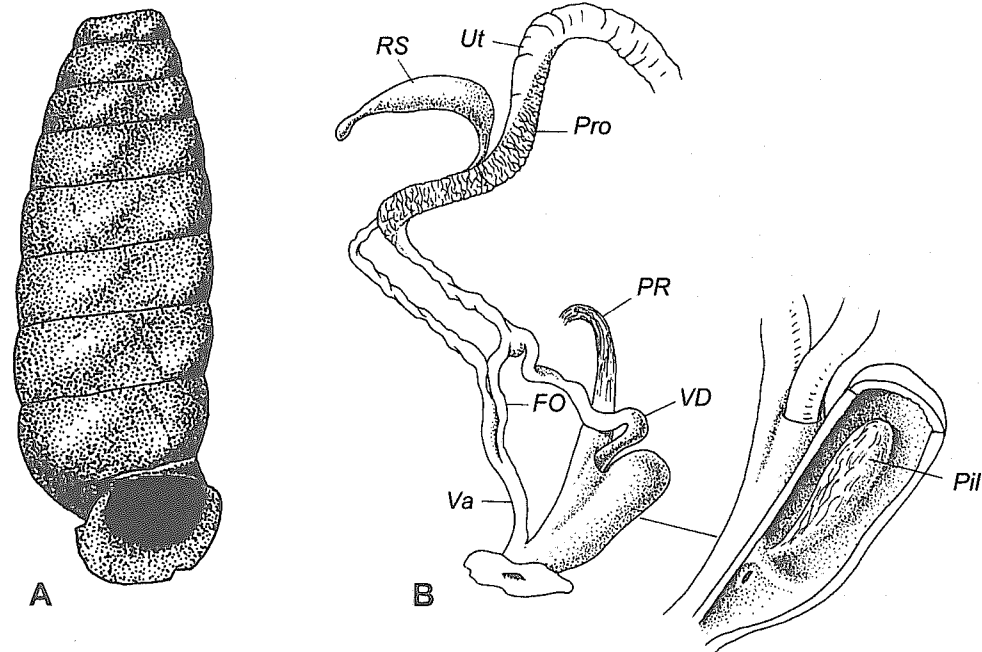


Fig. 466. A — *Urocoptis* (*Urocoptis*) *cylindrus* (Dillwyn, 1817). Shell: Jamaica. SPb. B — ! *Urocoptis* (*Urocoptis*) *procera* (C. Adams, 1850). Windsor, Jamaica, July 28, 1974. Reproductive tract and interior of penis: Chicago No. 165515.

#### UROCOPTINAE Pilsbry, 1898

Shell decollated, medium-sized, cylindrical, conic or obesely-fusiform. Aperture continuous (only exception — *Anoma*). Columella solid, thin, simple or with 1 lamella. Parietal, basal or palatal lamellae absent.

Jaw very thin, delicate, of many narrow converging plaits.

Penis short, internally with variously developed stimulator. Epiphallus absent or short. Penial retractor present. Flagellum wanting. Spermathecal stalk without diverticle.

DISTRIBUTION. Jamaica and Haiti; a few species in Cuba.

#### *Urocoptis* Beck, 1837

Beck, 1837: 83.

— *Cylindrella* L. Pfeiffer, 1840: 41.

TYPE SPECIES — *Pupa cylindrus* Dillwyn, 1817; SD Gray, 1847.

Shell dextral or (rarely) sinistral, elongated, cylindrical, fusiform or ovate, mostly decollated, of many narrow whorls. Aper-

ture rounded, free. Columella thin, slightly twisted or with single spiral lamella. Umbilicus absent.

Jaw delicate, arched, with numerous plaits.

Upper portion of penis protruded. Penial retractor branched off from ocular retractor.

DISTRIBUTION. Jamaica.

#### *Urocoptis* (*Urocoptis* s. str.)

Fig. 466

Shell subcylindrical, solid, of 8-11 (after decollation) slightly convex whorls. Last whorl with very weak basal keel. Color corneous to reddish-chestnut. Postembryonic whorls with (rather) fine, regular riblets. Aperture subcircular, vertical to moderately oblique, free, adnate, with broadly reflexed, thin margins. Columella thin, slightly twisted, without lamellae. Height 11-36, diam. 5.5-9.5 mm (24.0 × 8.8 mm).

Vas deferens rather short, stout, penetrating expanded base of penial retractor and entering basal portion of penis via sim-

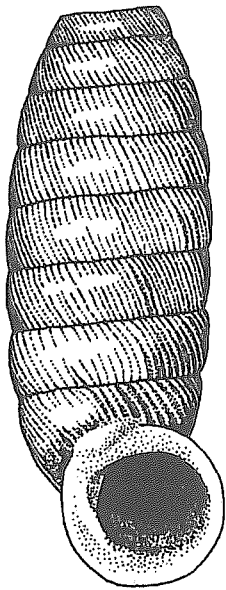


Fig. 467. A — *Urocoptis (Spirocoptis) sanguinea* (L. Pfeiffer, 1845).  
Jamaica. Leiden.

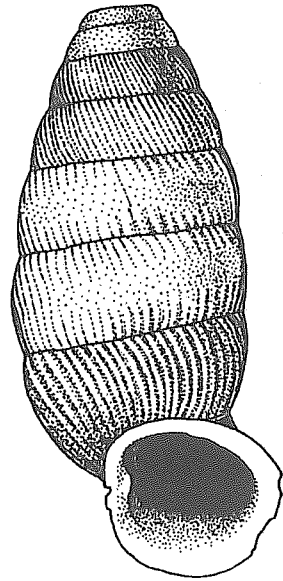


Fig. 468. *Urocoptis (Urocoptola) gruneri* (Dunker, 1844).  
Haiti. Leiden.

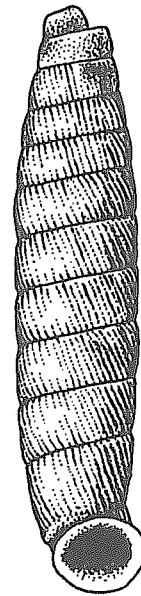


Fig. 469. ! *Urocoptis (Spirostemma) similis* (C. Adams, 1849).  
Jamaica. Paris.

ple pore. Penis not long, clavate, internally with 2 chambers, demarcated by circular fold: basal, in which vas deferens opens, and blind proximal, containing large fleshy pilaster. Penial retractor long, originating from columellar muscle. Free oviduct and vagina rather long, slender, of about equal length. Spermathecal stalk slender, long, reservoir elongated, capacious.

DISTRIBUTION. Jamaica. About 15 spp.

*Urocoptis (Spirocoptis) Pilsbry, 1902*  
Fig. 467

Pilsbry, 1902 (1902-1903): 113 (pro sect.).

TYPE SPECIES — *Cylindrella sanguinea* L. Pfeiffer, 1845; OD.

Shell ovate-cylindrical, quite solid, of 8-9 whorls after decollation. Color brown to chestnut, lip white. Postembryonic sculpture of fine irregular rib-striation becoming stronger behind aperture, and weak spiral striae, somewhat sharper on upper whorls. Aperture subcircular, with widely reflexed margins. Columella with broad, smooth, spiral lamella. Umbilicus closed, but umbili-

cal depression present. Height 17-28, diam. 7-9 mm (24.0 × 8.8 mm).

DISTRIBUTION. Jamaica. About 10 spp.

*Urocoptis (Urocoptola) Clench, 1935*  
Fig. 468

Clench, 1935a: 3 (*Autococtis* sect.).

TYPE SPECIES — *Cylindrella gruneri* Dunker, 1844; OD.

Shell ovate-conic, solid, of about 7-8 (after decollation) whorls. Color corneous. Last whorl with ridge on basal surface. Suture even, not crenulate. Surface nearly smooth to finely ribbed. Aperture subcircular. Columella with smooth lamella in last whorl. Height 15-37, diam. 7-13 mm (27.0 × 10.5 mm).

DISTRIBUTION. Haiti. 13 spp.

*Urocoptis (Spirostemma) Pilsbry et Vanatta, 1898*  
Fig. 469

Pilsbry & Vanatta, 1898: 270, 275 [*Urocoptis (Urocoptis* s. str.); sect.].

TYPE SPECIES — *Cylindrella rubra* Pilsbry et Vanatta, 1898 (non C. Adams, 1849) = *Cylindrella (Anoma) inusitata* Vendryes, 1901; OD.

Shell slender, pillar-shaped or cylindrical-fusiform, moderately solid, dull or a little glossy, of 10-11 (after decollation) flattened whorls. Last whorl with distinct, somewhat crenulated basal keel surrounding concave basal area. Color light corneous, brown or reddish. Embryonic whorls weakly ribbed; later with accurate, crowded radial wrinkles or riblets. Aperture rounded-ovate, well oblique, continuous, with shortly reflexed, more or less thickened margins. Columella coiled cork-screw-like, at least in later whorls or last one. Height 6-25, diam. 1.7-5.0 mm (12.0 × 2.5 mm).

DISTRIBUTION. Jamaica. 8 spp.

*Bactrocoptis* Pilsbry, 1902  
Fig. 470

Pilsbry, 1903 (1902-1903): 112, 143 (*Urocoptis* sect.).

TYPE SPECIES — *Cylindrella rosea montana*

C. Adams, 1849 (= *Cylindrella rosea* L. Pfeiffer, 1844); OD.

Shell decollated, cylindrical, slender, thin, of 9-11 (after decollation) nearly flat whorls. Last whorl with or without basal keel. Color dark-brown, sometimes with pink tint or variegated with lighter streaks or patches. Postembryonic whorls with very fine radial wrinklets. Aperture round, with more or less thickened and reflexed margins. Columella thin, simple or twisted in last 3 or 4 whorls. Umbilicus closed. Height 12-22, diam. 3.5-5.5 mm (13.5 × 3.8 mm).

Vas deferens short and very stout, entering penis apically. Penis small, obesely sub-cylindrical, thin-walled, internally with short, irregular, smoothed folds and strong Y-shaped pilaster. Pore of vas deferens (epiphallic pore) opens between arms of pilaster; thin additional fold between arms may be also present. Penial retractor exceptionally short, branched off from ocular retractor. Free oviduct and vagina of about same length, latter somewhat swollen. Spermathecal stalk slender, cylindrical.

DISTRIBUTION. Jamaica. 4 spp.

*Archegococtis* Pilsbry, 1903  
Fig. 471

Pilsbry, 1903 (1902-1903): 301.

TYPE SPECIES — *Cylindrella crenata* Weinland et Martens, 1859;

Shell decollated, pillar-shaped, rather solid, of 6-10 (after decollation) flattened whorls. Last whorl with basal keel. Coloration consists of dark-grey background and irregular light-grey zigzagged pattern occupying upper half of each whorl; lower half of whorls occupied with light, radial "rays". Sculpture of postnuclear whorls of irregular, wavy, radial wrinkles. Aperture subcircular, free, with slightly thickened, reflexed margins. Columella thin, straight, solid, lacking lamellae. Height 26-40, diam. 7-11 mm (26.5 × 7.8 mm).

Jaw arcuate, moderately strong, densely and irregularly striated vertically.

DISTRIBUTION. Haiti. 1 sp. with 3 forms.

*Strophina* Mörch, 1852  
Fig. 472

Mörch, 1852: 35.

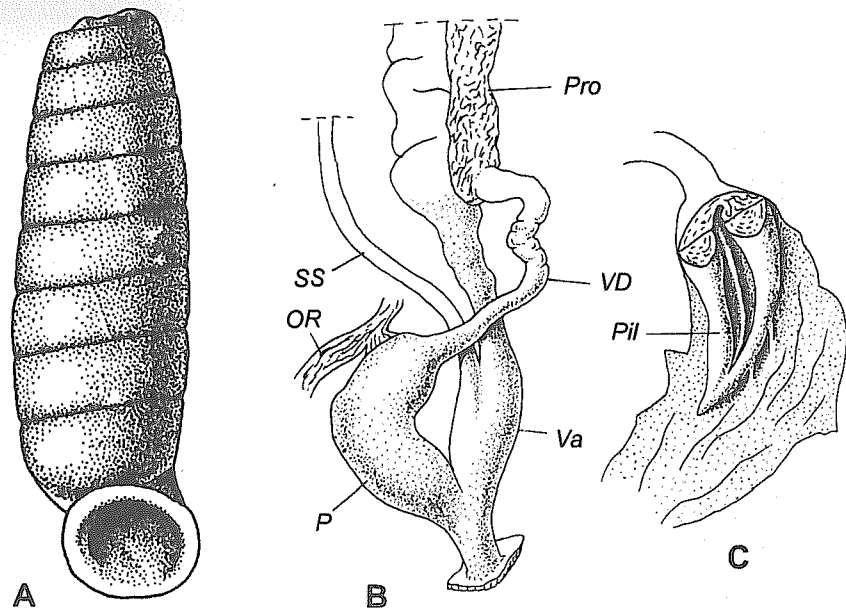


Fig. 470. *Bactrocoptis rosea* (L. Pfeiffer, 1844).  
 A — shell: Jamaica. Leiden. B — distal portion of reproductive tract. C — interior of penis. Abandoned quarry, S of Southhall on Black River road, St. Elizabeth, February 11, 1997. Moscow No. Lc-23740.

TYPE SPECIES — *Clausilia laterradii* Grateloup, 1839; monotypy.

Shell decollated, obese, subcylindrical to clavate, quite solid, of 7-8 (after decollation) slightly convex whorls. Last whorl with distinct, thread-like keel. Color white, sometimes with bluish tint; aperture brown inside. Postembryonic sculpture of strong, broad, smoothed, distantly spaced ribs. Aperture subcircular, adnate, nearly vertical, with scarcely thickened, reflexed margins. Columella very thick, in 2-4 whorls from below with polished, shining, broad, brownish lamella. Umbilicus closed. Height 10.5-15.0, diam. 4.5-5.0 mm (10.5 × 4.5 mm).

DISTRIBUTION. Beata Island, Haiti. 1 sp.

*Allocoptis* Thompson et Franz, 1976  
 Fig. 473

Thompson & Franz, 1976: 14.

TYPE SPECIES — *Allocoptis nebrias* Thompson et Franz, 1976; OD.

Shell decollated, subcylindrical, slightly tapering, thin, fragile, shining, subtransparent, of 6.3-8.3 (after decollation; about 6

Fig. 471. *Archegocoptis crenatus* (Weinland et Martens, 1859).  
 Jeremie, Haiti. Leiden.

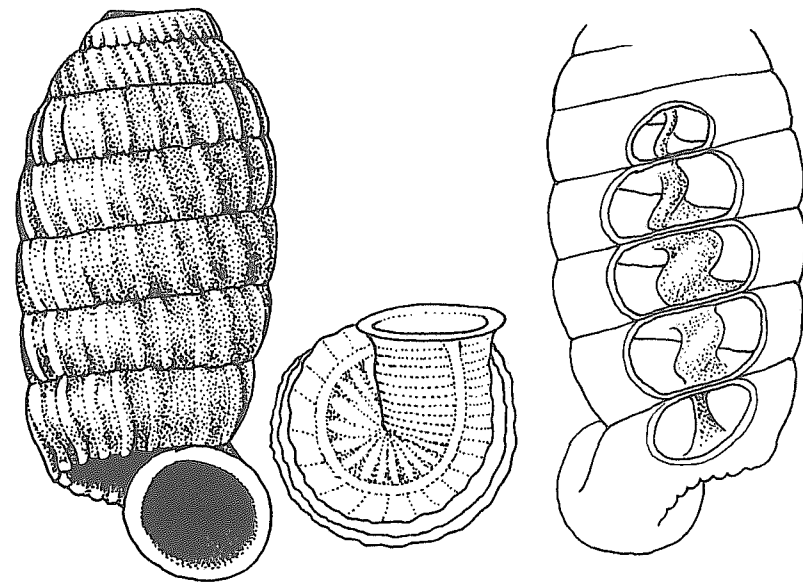


Fig. 472. *Strophina laterradii* (Grateloup, 1839).  
 NW coast of Beata Island, Haiti. Moscow No. Lc-23711 (Phil. No. 164914).

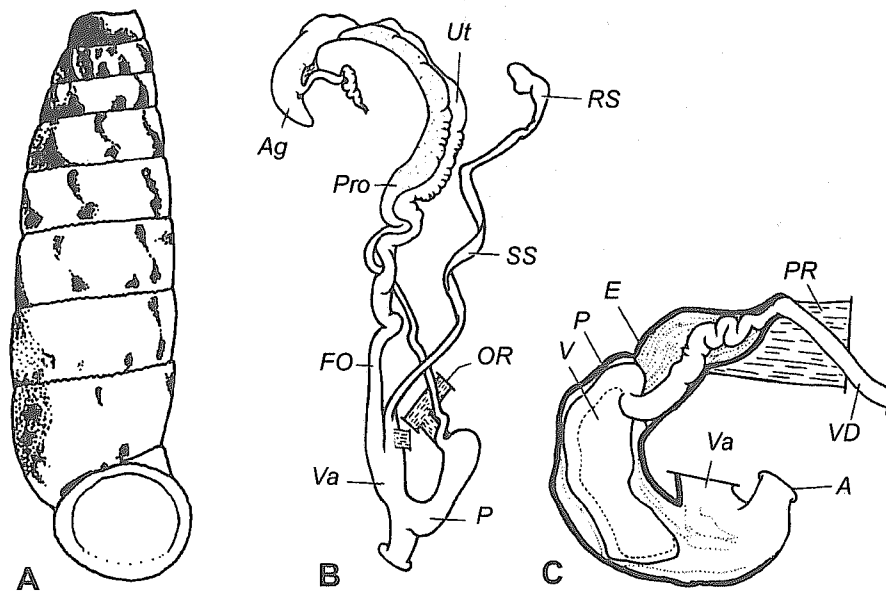
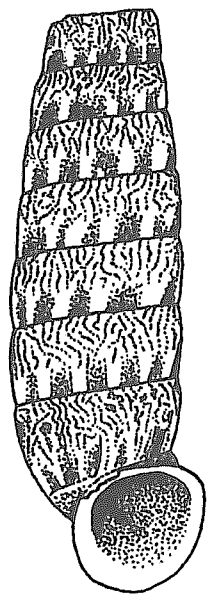


Fig. 473. *Allocoptis nebrias* Thompson et Franz, 1976.  
 A — shell. B — reproductive tract. C — interior of penis. After Thompson & Franz, 1976.



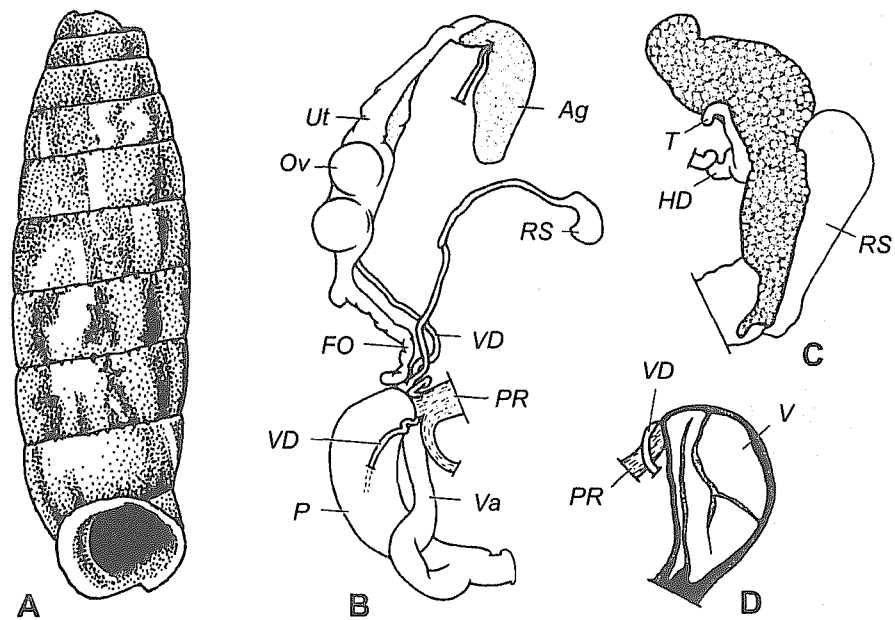


Fig. 474. A — *Autocoptis monilifera* (L. Pfeiffer, 1851). Pedro Santano, St. Rafael [Haiti]. Paris. B, C, D — ! *Autocoptis eburata* Thompson et Franz, 1976. B — reproductive tract. C — albumen gland, talon and spermathecal reservoir. D — interior of penis. After Thompson & Franz, 1976.

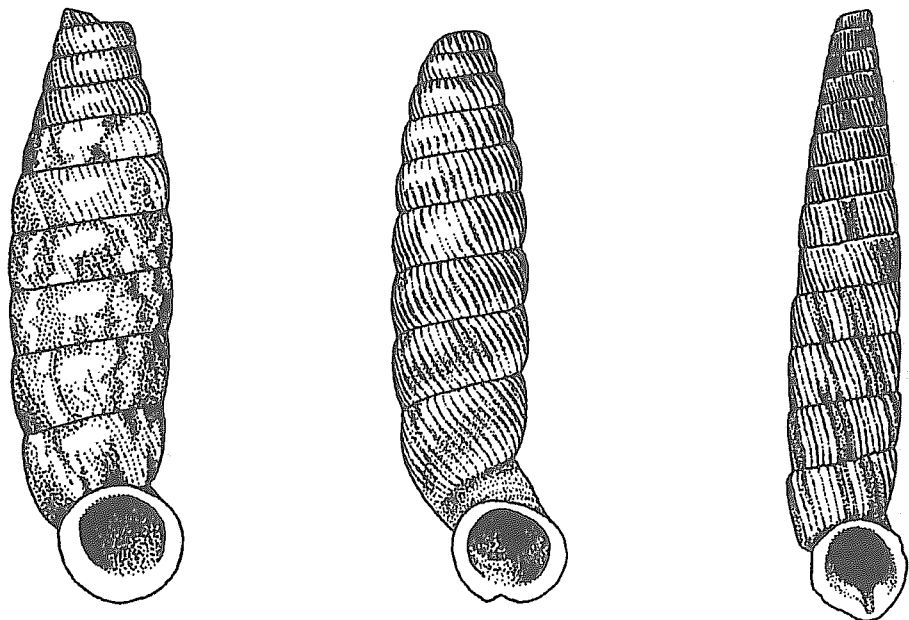


Fig. 475. *Cochlodinella (Cochlodinella) poeyana*, (Orbigny, 1841). Cuba. SPb.

Fig. 476. *Cochlodinella (Ventricoptis) atropurpurea* (Arango, 1882). La Laguna en Pinar del Rio, Cuba. Syntype. Phil. No. 72889.

Fig. 477. *Angulicervix peasei* (Pilsbry, 1933). Del Morte's coffee finca, 5-6 miles W of Barahona, Santo Domingo, Haiti. Holotype. Phil. No. 160994a.

whorls missing) flattened whorls. Last whorl rounded basally, but sometimes basal keel may be very weakly developed. Coloration consists of light-gray background and brown spots and occasional radial brown bars. Earlier postembryonic whorls with regularly spaced brown riblets with swollen ends; on lower whorls, central portion of many riblets disappears leaving only swollen ends. Aperture circular, with thin, shortly reflexed margins. Umbilicus narrow. Height 10.5-14.3, diam. 3.2-4.0 mm.

Talon and carrefour embedded within albumen gland. Vas deferens thin, entering epiphallus apically. Epiphallus with voluminous lumen, its inner surface with numerous close, low, fleshy folds. Penis swollen, enlarged, with long stout verge that attached to apex and upper wall of penis; verge folded, with deep lateral furrow continuous with opening of vas deferens. Penial retractor originates on columellar trunk and inserts on epiphallus apically. Free oviduct markedly longer than vagina. Spermathecal duct long, with small reservoir that appressed against albumen gland.

DISTRIBUTION. Haiti. 1 sp.

#### *Autocoptis* Pilsbry, 1902

Fig. 474

Pilsbry, 1902 (1902-1903): 112 (*Urocoptis* subg.).  
Thompson & Franz, 1976: 7.

TYPE SPECIES — *Cylindrella monilifera* (L. Pfeiffer, 1851); OD.

Shell decollated, subcylindrical, moderately solid, shining, of 8-9 (after decollation) strongly flattened whorls. Last whorl with moderately developed basal keel. Suture crenulated. Color variegated: more opaque whitish spots and streaks alternating with more translucent corneous parts. Postembryonic sculpture of variously developed, sometimes obsolete, fine, regular ribstriation. Aperture ovate, free, adnate, with somewhat thickened, moderately reflexed margins. Columella straight or moderately twisted, with smooth, low, callous lamella. Umbilicus, a minute crack. Height 15-32, diam. 5-8 mm (21.5 × 6.3 mm).

Talon exposed, long, curved. Vas deferens long, slender, entering penis laterally. Penis bulky, internally with large, fleshy verge. Penial retractor — branch of common columellar trunk, attached to summit

of penis. Uterus may contain a few shelled eggs. Free oviduct rather long, approximately equal to vagina. Spermathecal stalk long, narrow. Reservoir of irregular shape.

DISTRIBUTION. Haiti. 17 spp.

#### *Cochlodinella* Pilsbry et Vanatta, 1898

Pilsbry & Vanatta, 1898: 270, 274 [*Urocoptis (Urocoptis s. str.)*; sect.].

TYPE SPECIES — *Pupa poeyana* Orbigny, 1841; OD.

Shell decollated (rarely entire in exceptional individuals), slender, fusiform or subcylindrical, rather thin, slightly translucent, of about 10 (after decollation) flattened to moderately convex whorls. Last whorl rounded or with weak basal keel. Color light- to dark-corneous, uniform or variegated. Postembryonic whorls finely, regularly ribbed. Aperture circular, adnate or solute, with shortly reflexed and slightly thickened margins. Columella slender, straight, arcuate in last whorl, or with very weak spiral lamellae. Umbilicus closed.

DISTRIBUTION. W Cuba, S Florida.

#### *Cochlodinella (Cochlodinella s.str.)*

Fig. 475

Color light-corneous, marbled with whitish radial spots and streaks, riblets lighter. Last whorl adnate or only slightly solute. Columella arcuate in last whorl only. Height 9-19, diam. 2.5-4.8 mm (12.5 × 3.2 mm).

DISTRIBUTION. W Cuba, S Florida. 17 spp.

#### *Cochlodinella (Ventricoptis)*

Jaume et Torre, 1972

Fig. 476

Jaume & Torre, 1972: 1566 (*Cochlodinella* subg.).

TYPE SPECIES — *Cylindrella atropurpurea* Arango, 1882; OD.

Color light- to dark-corneous. Postapical whorls strongly solute. Columella with very weak spiral lamella. Height 16-22, diam. 4-5 mm (19.0 × 4.5 mm).

DISTRIBUTION. W Cuba. 16 spp. & subspp.



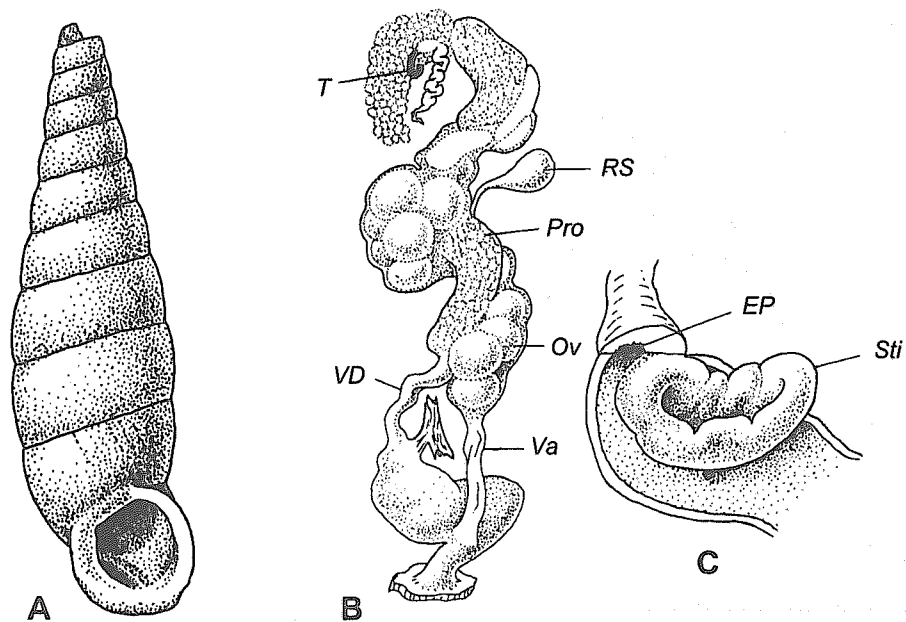


Fig. 478. A — ! *Anoma adamsi* Pilsbry, 1903. Shell: Spring Garden, nr. Ulster Spring, Trelawny, Jamaica. Holotype. Phil. No. 87327. B, C — ! *Anoma maugeri* (Wood, 1828). Reproductive tract and interior of penis: primary forest, N slope of Dolphin Head, S of Askenish, Hanover Parish, Jamaica, February 7, 1997. Moscow No. Lc-23743.

*Angulicervix* Pilsbry, 1933  
Fig. 477

Pilsbry, 1933: 151 (*Brachypodella* subg.).

TYPE SPECIES — *Brachypodella peasei* Pilsbry, 1933; OD.

Shell decollated, narrowly fusiform, rather thin, of about 13 (after decollation) flattened whorls. Last whorl with strong, crenulated basal keel. Color light-brown with darker streaks; some riblets white. Postembryonic sculpture of fine but sharp radial riblets. Aperture subcircular, free, with reflexed margins. Columella simple, slender, sinuous in last whorl. Umbilicus closed. Height 16.2-17.8, diam. 3.1-3.5 mm (17.4 × 3.3 mm).

DISTRIBUTION. Haiti. 1 sp.

*Anoma* Albers, 1850  
Fig. 478

Albers, 1850: 209 (*Cylindrella* subg.).

— *Leia* Albers, 1850: 207 [nom. praeocc., non Meigen, 1818 (Diptera); *Cylindrella* subg.; t.-

sp. *Cylindrella maugeri* Wood, 1828; monotypy].

— *Lia* Mörch, 1852: 35 [nom. praeocc., non Eschscholtz, 1829 (Coleoptera); nom. err. pro *Leia* Albers, 1850].

— *Inliaculus* Schaufuss, 1869: 15 (*Macroceramus* subg.; t.-sp. *Cylindrella blandiana* L. Pfeiffer, 1852; monotypy).

— *Vendryesia* Simpson, 1894: 430 (nom. nov. pro *Leia* Albers, 1850).

— *Vendryesia* Pilsbry et Vanatta, 1898: 280 (nom. err. pro *Vendryesia* Simpson, 1894).

TYPE SPECIES — *Cylindrella tricolor* L. Pfeiffer, 1847; SD Martens in Albers, 1860.

Shell mostly decollated, fusiform or oblong-conic, rather solid, glossy, shining, of 10-12 (after decollation) slightly to moderately convex whorls. Last whorl with rather sharp basal keel. Color white, yellow or brown, sometimes with white irregular streaks, or shell glass-like and colorless when fresh. Postapical whorls nearly smooth or finely, silky, radially striated. Aperture rounded or subangular below, interrupted, with more or less reflexed and expanded margins. Columella slender throughout or thickened in 2 last whorls. Umbilicus nearly closed or very narrow.

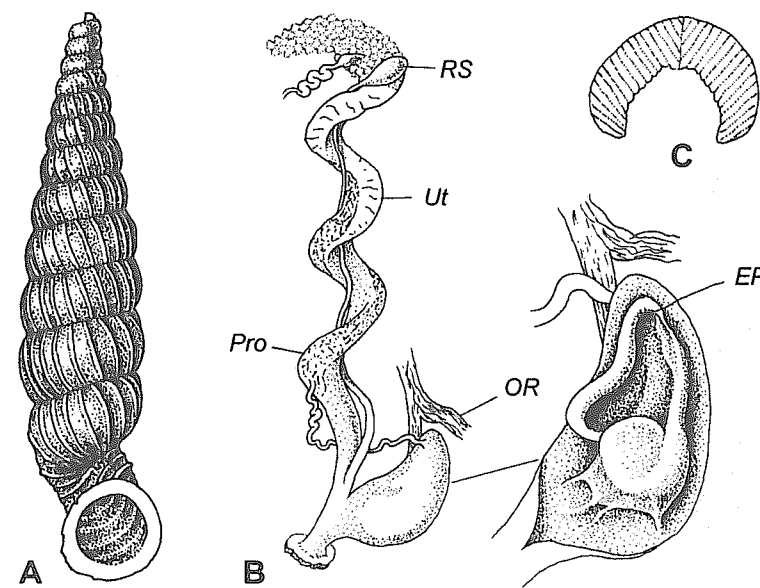


Fig. 479. A — *Tetrentodon* (*Tetrentodon*) *plicatus* (Poey, 1858). Shell: Caberaz, Matanzas Prov., Cuba. Moscow No. Lc-23717 (Phil. No. 14800). B, C — ! *Tetrentodon* (*Tetrentodon*) *clerchi* (L. Pfeiffer, 1870): Escaleras de Jaruco E of Habana, Cuba, April 2, 1981. B — Reproductive tract and interior of penis. C — jaw. Moscow No. Lc-23745.

Height 13.5-23.5, diam. 4-6 mm (19.8 × 5.2 mm).

Jaw thin, highly arched, composed of many narrow plaits.

Talon exposed, curved, finger-shaped, heavily pigmented with black. Vas deferens extraordinary short and stout. Penis bulky, swollen, internally with large, fleshy stimulator of irregular spoon-like appearance. Penial retractor — branch of common columellar muscle, attached to upper part of penis laterally. Uterus contains numerous large eggs. Vagina not long, thin-walled. Spermathecal stalk slender, reservoir ovate.

DISTRIBUTION. Jamaica, SW Haiti. Over 30 spp. & forms.

TETRENTODONINAE Bartsch, 1943

Bartsch, 1943a: 31. Jaume, Torre, 1972: 1528.

Shell entire or decollated, cylindrical, slender, rarely pupiform. Aperture free. Columella thin, solid, nearly simple to lamellate: number of lamellae mostly 1-3, rarely up to 8; some of them sometimes with ser-

rated or denticulated edges. Parietal lamella may be present; palatal and basal lamellae wanting.

Jaw composed of many narrow, converging plaits.

Penis short, internally with pilaster(s). Epiphallus very short or absent. Penial retractor present. Flagellum wanting. Spermathecal stalk without diverticle.

DISTRIBUTION. Cuba.

*Tetrentodon* Pilsbry, 1903

Pilsbry, 1903 (1902-1903): 267 [*Urocoptis* (*Gongylostoma*); sect.].

— *Trachelia* L. Pfeiffer, 1853: 564 [nom. praeocc., non Scopoli, 1777 (Aves), nec Servain, 1834 (Coleoptera); part].

TYPE SPECIES — *Cylindrella plicata* Poey, 1858; OD.

Shell mostly decollated, slender, thin, high conic-cylindrical or elongated-fusiform. Postapical sculpture mostly of solid or hollow ribs. Aperture subcircular, with thin, variously reflexed margins. Columella

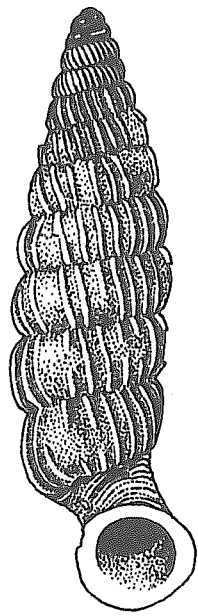


Fig. 480. *Tetrentodon (Blaincoptis) blainiana* (L. Pfeiffer, 1863). Guajaibon Mts., Pinar del Rio, Cuba. Phil. No. 73267.



Fig. 481. ! *Tetrentodon (Cylindrocoptis) barroi* Jaume et Torre, 1972. Escaleras de Jaruco E of Habana, Cuba. Moscow No. Lc-23706.

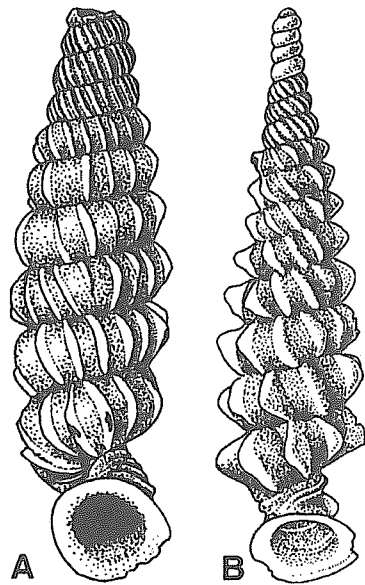


Fig. 482. *Tetrentodon (Scalari-coptis) scalarina* (Shuttleworth, 1852). A — decollated shell: Matanzas Prov., Cuba. Paris. B — entire shell: La Chavetta, Madruga, Habana Prov., Cuba. Phil. No. 155764.

thin, slender, solid, provided with twist or thin, thread-like lamella. Umbilicus absent. DISTRIBUTION. Cuba.

*Tetrentodon (Tetrentodon s. str.)*  
Fig. 479

Shell entire or shortly truncated, slender, attenuate, acicular, rather thin, of 11-14 moderately convex whorls. Last whorl without basal keel. Color brown or corneous, ribs lighter. Embryonic whorls vaguely granular. Sculpture of postapical whorls of lamellar, solid radial ribs. Aperture circular, solute, with thin, reflexed margins. Columella thin, hollow, slightly sinuous. Height 9-28, diam. 2-5 mm (10.3 × 2.2 mm).

Talon, a simple swelling of hermaphroditic duct, on surface of albumen gland. Vas deferens thin, entering penis subapically. Epiphallus absent. Penis irregularly ovate or pear-shaped, thin-walled, internally with strong, roughly V-shaped pilaster turned by its apex to summit of penis; one arm of pilaster ends by large pad-like thickening

(stimulator), the other — simple fold. Opening of vas deferens located just under apex of pilaster. Penial retractor very short, arises on right ocular retractor. Vagina extremely short (nearly absent). Spermathecal stalk long, slender, cylindrical, reservoir small, ovate, on basal part of albumen gland.

DISTRIBUTION. W Cuba, Bahama Islands (New Providence). About 60 spp.

*Tetrentodon (Blaincoptis)*  
Jaume et Torre, 1972)  
Fig. 480

Jaume & Torre, 1972: 1571; 1976: 48.

TYPE SPECIES — *Cylindrella blainiana* L. Pfeiffer, 1863; OD.

Shell slender, cylindrical-fusiform, moderately thin, of 10-11 convex whorls. Last whorl without basal keel. Color corneous, apex dark, ribs white. Embryonic whorls smooth, semitransparent. Postembryonic whorls with distinct, irregular, hollow ribs. Aperture solute, circular, with reflexed margins. Columella with weak thread-like la-

mella. Height 10-12, diam. 2.6-3.3 mm (11.5 × 3.0 mm).

DISTRIBUTION. W Cuba (Pinar del Rio Prov.). 1 sp. with 2 subspp.

*Tetrentodon (Cylindrocoptis)*  
Jaume et Torre, 1972)  
Fig. 481

Jaume et Torre, 1972: 1538; 1976: 16.

TYPE SPECIES — *Cylindrella cyclostoma* L. Pfeiffer, 1855; OD.

Shell very slender, thin, translucent, of 13-16 (after decollation) slightly convex whorls. Last whorl solute. Color corneous to reddish. Postembryonic whorls nearly smooth to radially ribbed. Columella with median twist in each whorl. Height 12-15, diam. 1.4-2.0 mm (14.0 × 1.8 mm).

DISTRIBUTION. W Cuba. 12 sp.

*Tetrentodon (Gravicoptis)*  
Jaume et Torre, 1972)

Jaume & Torre, 1972: 1528; 1976: 6.

TYPE SPECIES — *Tetrentodon (Gravicoptis) gravidula* Jaume et Torre, 1976; OD.

"Tetrentodonid mollusks with bulbous apex and with the early whorls (after decollation) greatly swollen." (Jaume & Torre, 1976: 6). I did not see shells of the genus.

DISTRIBUTION. E Cuba (Camaguey Prov.) 3 spp. with 6 subspp.

*Tetrentodon (Scalari-coptis)*  
Jaume et Torre, 1972)  
Fig. 482

Jaume & Torre, 1972: 1529; 1976: 7.

TYPE SPECIES — *Cylindrella scalarina* Shuttleworth, 1852; OD.

Shell mostly decollated, slender, cylindrical-fusiform, rather thin, of 9-19 (after decollation) quite convex whorls. Last whorl without basal keel. Color corneous, ribs white, hollow. Early postembryonic whorls with thin, crowded riblets; later bear strong, distantly spaced, hollow ribs. Aperture solute, circular, with thin, broadly reflexed margins. Columella slender, with only weak, smoothed, low lamella. Height

8-11, diam. 2.1-2.3 mm (Paris: 8.2 × 2.2 mm; Phil.: 10.0 × 2.2 mm).

DISTRIBUTION. W Cuba. 4 spp.

*Tetrentodon (Siphonolaemus)*  
Pilsbry, 1903)  
Fig. 483

Pilsbry, 1903 (1902-1903): 58.

TYPE SPECIES — *Cylindrella minuta* L. Pfeiffer, 1859; OD.

Shell slender, high-conic, thin, of 14-16 quite convex whorls. Last whorl without basal keel. Color corneous. Embryonic whorls finely costulate, subsequent densely, regularly ribbed. Aperture solute, irregularly rounded, oblique, with thin, shortly reflexed margins. Columella slightly sinuated, with very weak, smoothed lamella. Height 7-8, diam. 1.6-1.8 mm (7.0 × 1.7 mm).

DISTRIBUTION. E Cuba. 1 sp.

*Orienticoptis* Jaume et Torre, 1972  
Fig. 484

Jaume & Torre, 1972: 1565; 1976: 42.

TYPE SPECIES — *Cochlodinella (Orienticoptis) hendersoni* Jaume et Torre, 1972; OD.

Shell shortly decollated, slender, fusiform, thin, more or less translucent, glossy, of 12-14 slightly convex whorls. Last whorl solute. Color brown, sometimes with opaque, whitish, irregular streaks and spots; peristome white. Postnuclear whorls regularly ribbed (ribs solid) to smoothish. Aperture subcircular, free, with thin reflexed margins. Columella very slender, straight, simple. Height 12-16, diam. 2.0-2.8 mm (14.5 × 2.6 mm).

DISTRIBUTION. Oriente Prov., Cuba. 7 spp.

*Anafecoctis* Jaume et Torre, 1972  
Fig. 485

Jaume & Torre, 1972: 1530 (*Tetrentodon* subg.); 1976: 8.

TYPE SPECIES — *Urocoptis alleni* Torre, 1929; OD.

Shell more or less spindle-shaped, partly scalariform, rather thin, of 10 very convex, partly uncoiled whorls divided by very deep suture. Color corneous, ribs white. Embry-

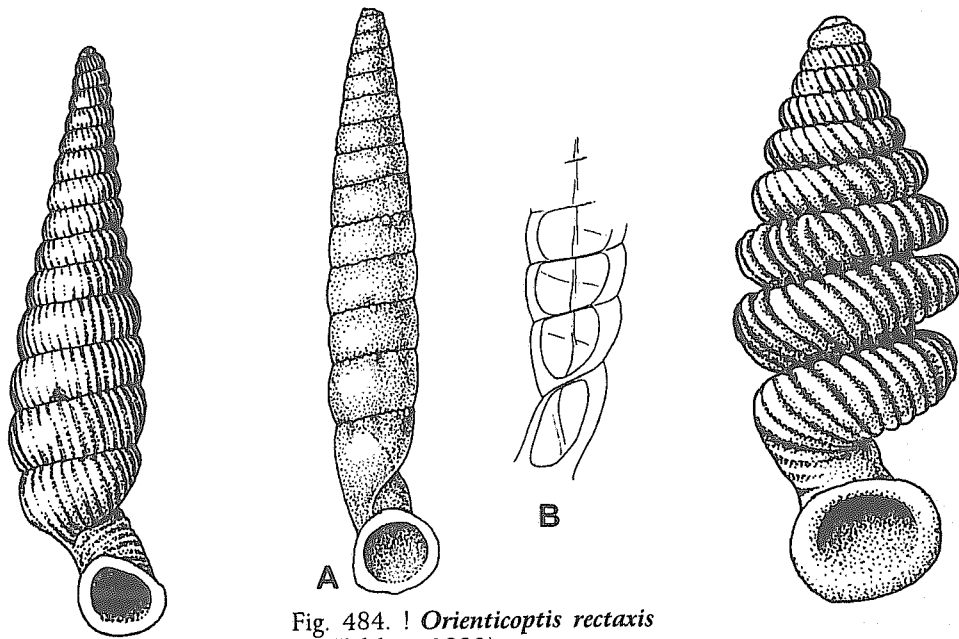


Fig. 483. *Tetrentodon (Siphonolaemus) minuta* L. Pfeiffer, 1859. Cuba. Paris.

Fig. 484. ! *Orienticoptis rectaxis* (Pilsbry, 1930). Arroyo de Agua, about 14 km northwest of Miranda Central [Cuba]. A — holotype. Phil. No. 147845a. B — columella. After Pilsbry, 1930a.

Fig. 485. *Anafecoptis alleni* (Torre, 1929). Sierra Anafe, Pinar del Rio Prov., Cuba. Syntype. Phil. No. 220390.

onic whorls smooth, later with strong, broad, rounded, solid ribs. Aperture subcircular, with broadly reflexed margins. Columella practically simple, just with not accented lamella. Umbilicus closed. Height 6-7, diam. 2.2-2.5 mm (6.6 × 2.4 mm).

DISTRIBUTION. W Cuba. 1 sp.

*Liparotes* Pilsbry, 1903  
Fig. 486

Pilsbry, 1903 (1903-1904): 56 (*Brachypodella* subg.)

TYPE SPECIES — *Cylindrella obesa* Weiland et Martens, 1859; OD.

Shell often shortly decollated, obesely fusiform, thin, translucent, of 12-13 (in entire shells; 8-9 when decollated) slightly convex whorls. Last whorl with weak basal keel or rounded. Color whitish to brownish. Embryonic whorls smooth, later with delicate, crowded, oblique riblets. Aperture rounded, rather small, oblique, with slightly reflexed margins and low parietal lamella.

Columella slender, somewhat twisted, without lamellae. Umbilicus closed. Height 10.5-16.5, diam. 3.2-5.0 mm (11.0 × 3.3 mm).

DISTRIBUTION. Haiti. 2 spp.

*Brevipedella* Pilsbry, 1903  
Fig. 487

Pilsbry, 1903 (1903-1904): 45 (*Brachypodella* subg.).

— ? *Katastoma* Clench, 1935a: 8 [t.-sp. *Brachypodella (Brevipedella) lasellensis* Clench, 1935; OD].

TYPE SPECIES — *Brachypodella (Brevipedella) imitatrix* Pilsbry, 1903; OD.

Shell shortly decollated, slender, fusiform, thin, of 8-14 slightly convex whorls. Last whorl somewhat angular below. Color whitish to yellowish-corneous. Embryonic whorls delicately radially costulate, later whorls densely, evenly rib-striated. Aperture subcircular, free, with reflexed margins. Columella slender, nearly straight, simple. Height 9-16, diam. 2.3-3.5 mm.

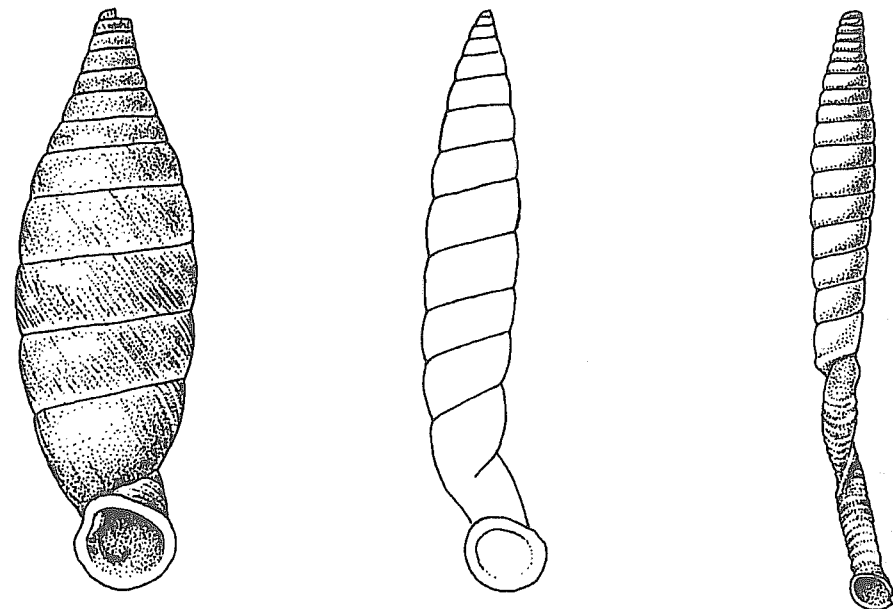


Fig. 486. *Liparotes obesus* (Weiland et Martens, 1859). Haiti. Phil. No. 73259.

Fig. 487. *Brevipedella imitatrix* (Pilsbry, 1903). After Pilsbry, 1903 (1903-1904).

Fig. 488. *Gyraxis brooksiana* (L. Pfeiffer, 1859). Cuba. Leiden.

DISTRIBUTION. Haiti, Cuba, Puerto Rico. 5 spp.

*Gyraxis* Pilsbry, 1903  
Fig. 488

Pilsbry, 1903 (1903-1904): 58.

— *Spiraxilla* Thiele, 1931: 773 (t.-sp. *Cylindrella brooksiana* L. Pfeiffer, 1859; monotypy).

TYPE SPECIES — *Cylindrella brooksiana* L. Pfeiffer, 1859; OD.

Shell sometimes shortly decollated, very slender, thin, of 11-25 slightly convex whorls. Last whorl uncoiled, curved. Color light-corneous. Embryonic whorls glabrous or very finely radially wrinkled. Postembryonic whorls delicately radially striated. Aperture round, turned more or less downward, with shortly reflexed, thin margins. Columella thin, without lamellae, gyrate in later whorls, forming open, cork-screw-like spiral. Umbilicus absent. Height 10-19, diam. 1.4-2.0 mm (17.5 × 1.8 mm).

DISTRIBUTION. E Cuba, Haiti. 5 spp. & subspp.

*Arangia* Pilsbry et Vanatta, 1898  
Fig. 489

Pilsbry & Vanatta, 1898: 270, 275 (*Urocoptis* subg.).

TYPE SPECIES — *Cylindrella sowerbyana* L. Pfeiffer, 1846; OD.

Shell decollated, cylindrical, with truncated-conic upper part, moderately solid, of 10-11 (after decollation) flattened whorls. Last whorl with rounded basal keel. Color uniformly corneous. Postembryonic sculpture of fine but distinct, oblique ribs. Aperture subcircular, oblique, shortly or not free in front, with widely reflexed margins. Columella with single strong, smooth spiral lamella, median in each whorl, sometimes obscurely double in some lower whorls. Umbilicus, an extremely narrow slit. Height 15.5-35.0, diam. 4.5-9.5 mm (32.0 × 9.4 mm).

DISTRIBUTION. E Cuba, Haiti (Gonave Island). 7-8 spp.

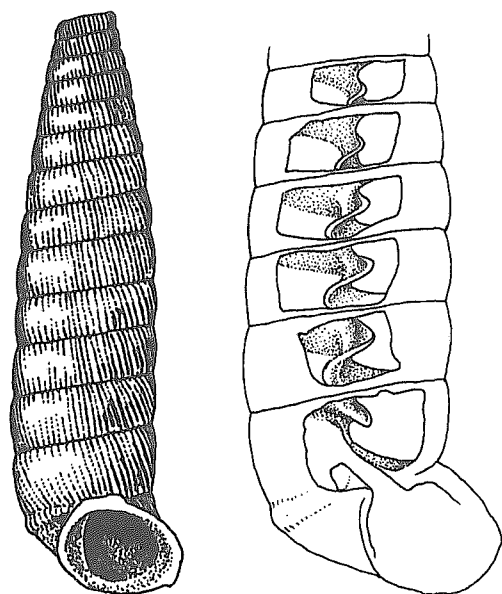


Fig. 489. *Arangia sowerbyana* (L. Pfeiffer, 1846). Cuba. Phil. No. 72951.

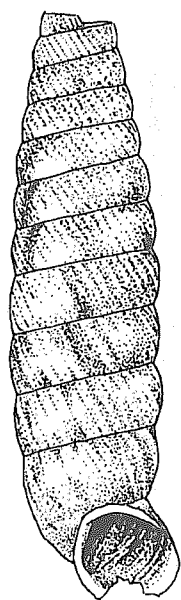


Fig. 490. *Gongylostomella (Arangocoptis) contentiosa* (Arango, 1884). Soledad Plantation, Villas Prov., Cuba. Vienna No. K 39500.

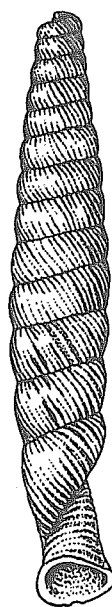


Fig. 491. *Gongylostomella (Juanocoptis) hilleri* (L. Pfeiffer, 1862). Cuba. Phil. No. 73155.



Fig. 492. *Gongylostomella (Gongylostomella) wrighti* (L. Pfeiffer, 1862). Cuba. Paris.



Fig. 493. *Torrecoptis bacillaris* (Torre, 1912). Sierra de Matahambre, Santa Clara, Cuba. Lectotype. Phil. No. 106374.

### *Gongylostomella* Pilsbry, 1941

Pilsbry, 1941: 70 (*Gongylostoma* subg.). Jaume & Torre, 1976: 59.

TYPE SPECIES — *Cylindrella wrighti* L. Pfeiffer, 1862; OD.

Shell mostly decollated, fusiform to cylindrical, slender or comparatively stout. Coloration consists of yellow to brown background and lighter pattern of streaks or spots. Postembryonic sculpture of radial ribbing. Aperture adnate or solute, with shortly reflexed margins. Columella provided with single serrate or denticulate lamella.

DISTRIBUTION. E and Central Cuba.

### *Gongylostomella (Arangocoptis)* Jaume et Torre, 1972) Fig. 490

Jaume & Torre, 1972: 1586; 1976: 63.

TYPE SPECIES — *Cylindrella contentiosa* Arango, 1884; OD.

Shell fusiform-turrite, comparatively stout, thin, translucent, of 10-15 (after decollation) flattened whorls. Last whorl

adnate, with thread-like basal keel. Color light-yellow to brownish-corneous, sparingly variegated with paler tint. Postembryonic whorls with more or less smoothed riblets. Aperture subcircular, oblique, adnate or only slightly solute; margins equally expanded throughout. Columellar lamella low, minutely serrate. Height 11-16, diam. 2.8-3.1 mm (11.3 × 2.9 mm).

DISTRIBUTION. E and Central Cuba. 7 spp. & subspp.

### *Gongylostomella (Juanocoptis)* Jaume et Torre, 1972) Fig. 491

Jaume & Torre, 1972: 1584; 1976: 61.

TYPE SPECIES — *Cylindrella hilleri* L. Pfeiffer, 1862; OD.

Shell decollated, acicular-fusiform, thin, of 13-15 (after decollation) rather convex whorls. Last whorl without basal keel. Color light-corneous, marbled with brown. Postembryonic whorls finely ribbed. Aperture irregularly circular, decidedly solute, with thin, scarcely reflexed margins. Co-

lumella with one serrated lamella. Height 11-14, diam. 1.8-2.1 mm (13.0 × 2.0 mm).

DISTRIBUTION. E Cuba. 14 spp. & subspp.

### *Gongylostomella (Gongylostomella* s. str.) Fig. 492

— *Palenqueoptis* Jaume et Torre, 1972: 1583 [*Gongylostomella* subg.; t.-sp. *Gongylostomella (Palenqueoptis) portuondoii* Jaume et Torre, 1972; OD].

— *Laevicoptis* Jaume & Torre, 1972: 1583 (*Gongylostomella* subg.; t.-sp. *Urocoptis creola* Aguayo, 1934; OD).

Richardson, 1991: 130.

Shell sometimes decollated, fusiform or subcylindrical, slender, thin, of 20-22 whorls. Basal keel absent. Coloration marbled with grey and white. Postnuclear sculpture of quite low, curved radial riblets and widely spaced, vague spiral lines; sometimes riblets present only on solute portion of last whorl. Aperture free, more or less solute, deflected. Columella lamella finely serrated. Height 17-21, diam. 1.8-2.2 mm (19.2 × 1.9 mm).

DISTRIBUTION. Central and E Cuba. 7 spp.

### *Torrecoptis* Bartsch, 1943 Fig. 493

Bartsch, 1943a: 31. Jaume & Torre, 1976: 17.

TYPE SPECIES — *Urocoptis (Gongylostoma) bacillaris* Torre, 1912; OD.

Shell aciculate, thin, translucent, of about 14 slightly convex whorls. Color yellowish, with or without light-brown radial streaks. Embryonic whorls smooth, polished; subsequent with regular, well spaced, radial riblets. Aperture circular, with slightly reflexed, thin margins. Columella with single, thin, translucent, delicately serrate lamella. Umbilicus absent. Height 14-17, diam. 2.2-2.7 mm (17.0 × 2.7 mm).

DISTRIBUTION. Cuba. About 65 spp.

### *Fibricutis* Pilsbry, 1903 Fig. 494

Pilsbry, 1903 (1902-1903): 186 [*Urocoptis (Gongylostoma)*; sect.]. Jaume & Torre, 1976: 112 (*Idiostemma* subg.).

TYPE SPECIES — *Cylindrella scabrosa* L. Pfeiffer, 1862; OD.

Shell usually decollated, subcylindrical,



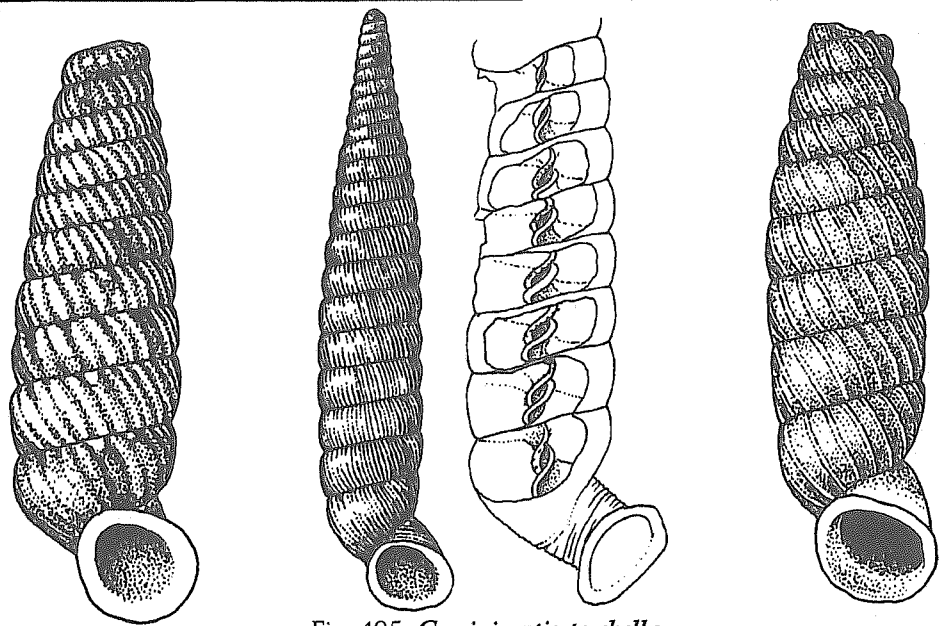


Fig. 494. *Fibricutis scabrosa* (L. Pfeiffer, 1862).  
Cuba. Phil. No. 73186.

Fig. 495. *Geminicoptis terebella* (Torre, 1929).  
Mogote del Mármoto de Cabrera, Viñales, Cuba. Holotype. Phil. No. 147863a.

Fig. 496. *Pfeiffericoptis (Garciaoptis) garciana* (Presas, 1865).  
Cuba. Paris.

slightly tapering upward, rather thin, of 10-12 (after decollation) moderately convex whorls. Last whorl practically without basal keel. Color corneous, with white streaks and spots, especially under suture. First half whorl microscopically granulose; next 3 or 4 whorls finely, closely axially ribbed. On later whorls sculpture very regular, consisting of oblique, closely spaced, coarse, radial wrinkles; in addition, irregular distantly spaced nodules present under suture and on periphery. Aperture solute, obliquely oval, margins thickened, reflexed. Columella slender and twisted in early whorls, developing in slender lamella in part remaining after decollation, which bears numerous, slender, outwardly directed spines. These spines disappear in penultimate whorl and lamella becomes twist in last whorl. Height 8.5-9.5, diam. 2.5-3.0 mm (8.5 × 2.5 mm).

DISTRIBUTION. E Cuba. 1 sp.

*Geminicoptis* Jaume et Torre, 1972  
Fig. 495

Jaume & Torre, 1972: 1605; 1976: 81.

TYPE SPECIES — *Urocoptis terebella* Torre, 1929; OD.

Shell entire, cylindrical-fusiform, thin, of 22-24 convex whorls. Last whorl free, protruding, descending a little, with weak basal keel. Color white, upper whorls dull brown. Embryonic whorls smooth, subsequent very closely and finely rib-striated; riblets nearly as wide as intervals, but on last whorl they sometimes become a little more widely spaced. Aperture subcircular, with rather strong, reflexed peristome. Columella with 2 strong, rounded lamellae, continuing into last whorl; upper lamella somewhat stronger, serrated. Umbilicus absent. Height 15.0-15.5, diam. 2.4-2.5 mm (15.5 × 2.4 mm).

DISTRIBUTION. W Cuba. 2 spp.

*Pfeiffericoptis* Jaume et Torre, 1972

Jaume & Torre, 1972: 1590; 1976: 67.

TYPE SPECIES — *Cylindrella fumosa* L. Pfeiffer, 1863; OD.

Shell decollated, (sub)cylindrical or fusiform, rather thin to moderately solid, of 9-12 (after decollation) flattened whorls. Last

whorl without basal keel. Color corneous. Postembryonic sculpture of lamellose and spaced or fine and crowded radial ribs. Aperture circular, solute, with reflexed, thin or thickened margins. Columella slender, provided with single denticulated or serrated lamella. Umbilicus absent.

DISTRIBUTION. W and Central Cuba.

*Pfeiffericoptis (Garciaoptis)*  
Jaume et Torre, 1972)  
Fig. 496

Jaume & Torre, 1972: 1591; 1976: 68.

TYPE SPECIES — *Cylindrella garciana* Presas, 1865; OD.

Radial ribs lamellose, more or less distantly spaced. Height 11-13, diam. 3.2-3.4 mm (12.2 × 3.3 mm).

DISTRIBUTION. W Cuba (Matanzas Prov.). 2 spp.

*Pfeiffericoptis (Pfeiffericoptis s. str.)*  
Fig. 497

Radial ribs fine, crowded. Height 16-19, diam. 3-4 mm (18.0 × 3.4 mm).

DISTRIBUTION. W and Central Cuba (Matanzas and Pinar del Rio Prov.). 11 spp.

*Sagracoptis* Jaume et Torre, 1972  
Fig. 498

Jaume & Torre, 1972: 1606; 1976: 81.

TYPE SPECIES — *Cylindrella crispula* L. Pfeiffer, 1839; OD.

Shell decollated, cylindrical, rather thin, of about 12 (after decollation) convex whorls. Last whorl without basal keel. Color whitish to light-corneous, ribs lighter. Postembryonic whorls regularly ribbed. Aperture subcircular, with well reflexed and expanded margins. Columella with 2 lamellae having somewhat thickened edges; upper stronger. Umbilicus closed. Height 11-14, diam. 3.0-3.3 mm (12.7 × 3.2 mm).

DISTRIBUTION. W Cuba. 11 spp. & subspp.

*Hetero-coptis* Jaume et Torre, 1972  
Fig. 499

Jaume & Torre, 1972: 1552; 1976: 30.

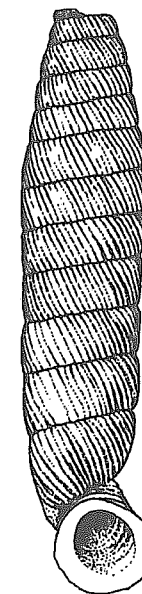


Fig. 497. *Pfeiffericoptis (Pfeiffericoptis) fumosa* (L. Pfeiffer, 1863).  
Paso El Cochino, El Palenque, Matanzas Prov., Cuba. Phil. No. 160456.

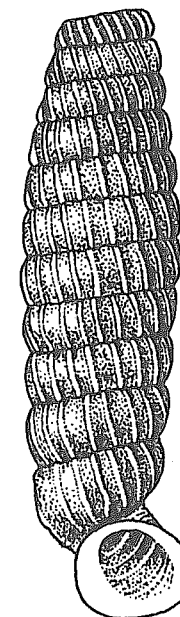


Fig. 498. *Sagracoptis crispula* (L. Pfeiffer, 1839).  
Cuba. Phil. No. 73065.

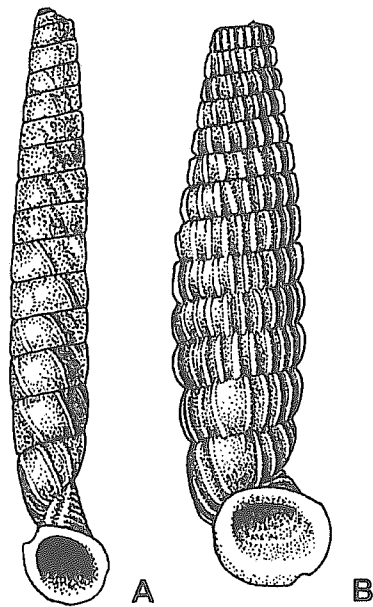


Fig. 499. A — *Heterocoelis tabacaria* Jaume et Torre, 1972. Guaicanamar, Camagüey, Cuba. Paris. B — *Heterocoelis bermudezi* Jaume et Torre, 1972. Cueva Galana, Calabazar de Sagua, S. Clara, Cuba. Paratype. Phil. No. 167398.

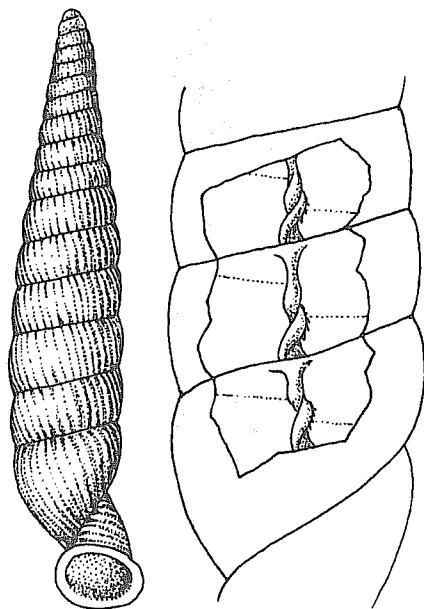


Fig. 500. *Capillacea capillacea* (L. Pfeiffer, 1863). Cuba. Paris.

- *Cavicoelis* Jaume et Torre, 1972: 1552 [*Heterocoelis* subg.; t.-sp. *Heterocoelis* (*Cavicoelis*) *cavicoelata* Jaume et Torre, 1972; OD].
- *Bermudezicoelis* Jaume et Torre, 1972: 1554 [*Heterocoelis* subg.; t.-sp. *Heterocoelis* (*Bermudezicoelis*) *bermudezi* Jaume et Torre, 1972; OD].
- *Clenchicoelis* Jaume et Torre, 1972: 1554 [*Heterocoelis* subg.; t.-sp. *Urocoelis* (*Gongylostoma*) *whittumi* Clench, 1966; OD].
- *Asthenocoelis* Jaume et Torre, 1972: 1555 [*Heterocoelis* subg.; t.-sp. *Heterocoelis* (*Asthenocoelis*) *salvatoris* Jaume et Torre, 1972; OD].

TYPE SPECIES — *Heterocoelis* (*Heterocoelis*) *tabacaria* Jaume et Torre, 1972; OD.

Shell decollated, acicular to subcylindrical, rather thin, dull, of 13-15 (after decollation) nearly flat to convex whorls. Last whorl rounded basally. Color brown, ribs and peristome lighter. Postembryonic sculpture of variously spaced, irregular, solid to hollow, radial ribs; sometimes ribs more or less obsolete. Aperture solute, subcircular, with reflexed, variously thickened margins. Columella with 2 lamellae, upper smooth, lower weakly denticulated or minutely serrulated. Umbilicus absent. Height 10-15, diam. 1.5-3.5 mm (*tabacaria*: 12.6 × 1.7 mm; *bermudezi*: 14.0 × 3.2 mm).

DISTRIBUTION. E and Central Cuba (Camagüey and Las Villas Prov.). 21 spp.

REMARK. Jaume & Torre (1972) have divided this genus into 5 subgenera, mainly based on structure of radial ribs (solid or hollow) and shape of columellar lamellae. However, a comparison of diagnoses of these subgenera shows that diagnostic characters overlap or incomparable. For example, in *Heterocoelis* s. str., ribs are solid, in *Bermudezicoelis* ribs are hollow, in *Cavicoelis* ribs are partly or entirely hollow, in *Clenchicoelis* ribs are strongly developed, in *Asthenocoelis* ribs are obsolete. Besides, the degree of rib development is often variable even within a population. Thus, I do not see reasons to recognize subgenera in *Heterocoelis*.

*Capillacea* Jaume et Torre, 1972  
Fig. 500

Jaume & Torre, 1972: 1589; 1976: 66.

TYPE SPECIES — *Cylindrella capillacea* L. Pfeiffer, 1863; OD.

Shell conic-fusiform, thin, semitranspar-

ent, of 14-15 whorls. Colorless. Embryonic whorls smooth. Postembryonic whorls finely, regularly ribbed. Aperture free, solute, with shortly reflexed margins. Columella with lamella bearing setae directed downwards, and twist above it. Umbilicus closed. Height 10-14, diam. 2-3 mm (12.5 × 2.3 mm).

DISTRIBUTION. W Cuba. 9 spp. & subspp.

*Steatocoelis* Pilsbry, 1941  
Fig. 501

Pilsbry, 1941: 70 (*Gongylostoma* sect.). Jaume & Torre, 1976: 65.

TYPE SPECIES — *Cylindrella ventricosa* L. Pfeiffer, 1857; OD.

Shell decollated, cylindrical, rather solid, of about 10 (after decollation) slightly convex whorls. Last whorl with weak, smoothed basal keel. Color variegated. Postembryonic whorls with even radial riblets. Aperture circular, with rather broadly expanded margins. Columella with serrated lamella and strong twist above it. Umbilicus absent. Height 11-17, diam. 3-4 mm (14.3 × 3.6 mm).

DISTRIBUTION. E Cuba. 3 spp.

*Poecilocoelis* Pilsbry, 1941  
Fig. 502

Pilsbry, 1941: 70 (*Gongylostoma* sect.).

TYPE SPECIES — *Cylindrella coeruleans* Poey, 1858; OD.

Shell decollated, cylindrical-fusiform, rather solid, of about 10 (after decollation) slightly convex whorls. Last whorl with low, smoothed basal keel. Color variegated. Postembryonic sculpture of fine, regular riblets forming nodules at upper ends. Aperture subcircular, with reflexed margins. Columella with very thin lamella which smooth in body whorl, then with widely spaced setae directed toward aperture. Umbilicus absent. Height 9-21, diam. 1.3-3.5 mm (11.5 × 1.5 mm).

DISTRIBUTION. Central and W Cuba. 7 spp.

*Tomelasmus* Pilsbry et Vanatta, 1898  
Fig. 503

Pilsbry & Vanatta, 1898: 271, 276 [*Urocoelis* (*Gongylostoma*); sect.].



Fig. 501. *Steatocoelis ventricosa* (L. Pfeiffer, 1857). Manzanillo, Cuba. Phil. No. 73196.

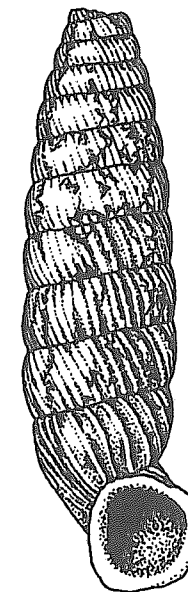


Fig. 502. *Poecilocoelis coeruleans* (Poey, 1858). Cueva del Agua, St. Guane, Cuba. Phil. No. 151085.

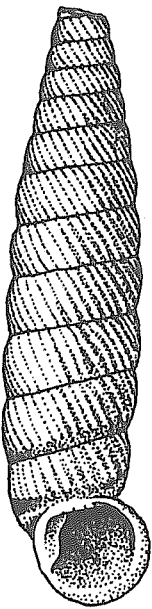


Fig. 503. *Tomelasmus torquatus* (Morelet, 1849).  
El Martillo, Viñales, Pinar del Rio, Cuba. Chicago No. 51116.

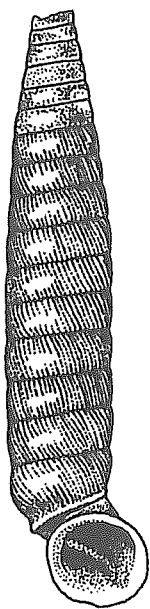


Fig. 504. *Amphicosmia salleana* (L. Pfeiffer, 1850).  
Haiti. Leiden.

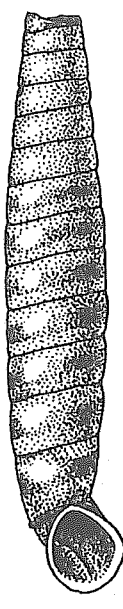


Fig. 505. *Nesocoptis pruinososa* (Morelet, 1849).  
Nueva-Jerana, Pinos Island, Cuba. Moscow No. Lc-23721.

— *Tomelasmus* (Zool. Rec., Moll., 1898: 60 — misquotation).

— *Scopulospica* Pilsbry, 1941: 70 (*Gongylostoma* sect.; t.-sp. *Cylindrella torquata* Morelet, 1849; OD).

TYPE SPECIES — *Cylindrella torquata* Morelet, 1849; OD.

Shell decollated, subcylindrical to pillar-shaped, rather thin, slightly translucent, of 9-11 (after decollation) moderately convex whorls. Last whorl scarcely elevated, without basal keel. Color corneous, with brown band occupying periphery on last whorl and suprasutural position on 1-3 preceding whorls. Postembryonic sculpture of regular, smoothed riblets. Aperture nearly uninterrupted, rounded, with thin, reflexed margins. Columellar lamella seen through aperture and distinctly developed throughout all length of columella. Height 17-30, diam. 4.8-6.3 mm (22.0 × 5.1 mm).

DISTRIBUTION. W Cuba. 35 spp.

*Amphicosmia* Pilsbry et Vanatta, 1898  
Fig. 504

Pilsbry & Vanatta, 1898: 271, 277 [*Urocoptis* (*Brachypodella*); sect.].

TYPE SPECIES — *Cylindrella salleana* L. Pfeiffer, 1850; OD.

Shell decollated, slender, cylindrical, rather thin, of 10-20 (after decollation) flattened whorls. Last whorl with basal keel extending for more than 1 whorl and seen on frontal surface of penultimate whorl. Color corneous or brown. Embryonic whorls smooth, postembryonic sculpture of fine, regular rib-striation. Aperture subcircular to ovate, with slightly thickened, shortly reflexed margins. Columella with 2 strong, thin, subequal lamellae, both minutely crenulated or denticulate at edges. Umbilicus closed. Height 11-27, diam. 2.5-5.0 mm (25.0 × 4.5 mm).

DISTRIBUTION. Haiti. 5 spp.

*Nesocoptis* Pilsbry, 1941  
Fig. 505

Pilsbry, 1941: 70 (*Gongylostoma* sect.). Jaume & Torre, 1976: 75.

TYPE SPECIES — *Cylindrella pruinososa* Morelet, 1849; OD.

Shell decollated, subcylindrical, shining, slightly translucent, of 12-14 (after decolla-

tion) flattened to nearly flat whorls. Last whorl scarcely descending in front, with rather strong basal keel which more or less rendered nodulose by radial riblets. Color brown, sometimes with darker peripheral band. Postembryonic sculpture of variously smoothed radial ribs. Aperture free, rounded, with shortly reflexed margins. Columella with 2 lamellae, upper smooth, lower minutely serrated or denticulated. Umbilicus absent. Height 20-27, diam. 3.5-5.0 mm (25.1 × 4.5 mm).

DISTRIBUTION. W and Central Cuba. 7 spp. & subspp.

*Uncinicoptis* Jaume et Torre, 1972  
Fig. 506

Jaume & Torre, 1972: 1604; 1976: 79.

TYPE SPECIES — *Cylindrella hidalgoi* Arango, 1879; OD.

Shell decollated, cylindrical, thin, translucent, of about 10 (after decollation) slightly convex whorls. Color corneous, with marbled pattern. Postembryonic whorls finely, irregularly rib-striated or ribbed; sometimes ribs fuse to form more or less strong nodules under suture. Aperture circular, solute, with moderately reflexed, thin margins. Columella with 2 thin lamellae; upper smooth, cord-like, lower smooth in penultimate whorl, in preceding whorl its edge with deep and narrow incisions, further upward with minute spines. Umbilicus absent. Height 11-15, diam. 2.7-3.2 mm (14.1 × 3.0 mm).

DISTRIBUTION. W Cuba. 12 spp. & subspp.

*Tenuistemma* Jaume et Torre, 1972  
Fig. 507

Jaume & Torre, 1972: 1572; 1976: 50.

TYPE SPECIES — *Cylindrella lateralis* L. Pfeiffer, 1860; OD.

Shell entire or decollated, very slender, turritid, thin, of more than 30 (up to 33 when nondecollated) whorls. Last whorl with gentle, serrated basal keel. Color corneous. Embryonic whorls more or less bulbous, microscopically granulate. Later whorls with closely spaced, very fine, wavy, radial riblets. Aperture obliquely ovate, solute, with reflexed, expanded and thickened

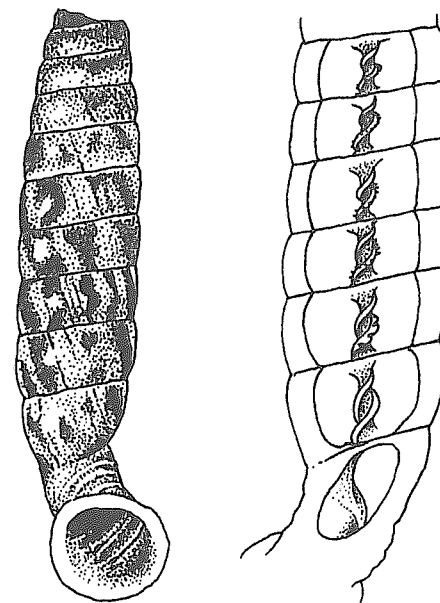


Fig. 506. *Uncinicoptis hidalgoi* (Arango, 1879).  
Cerros de Cabras, Cuba. Phil. No. 73152.

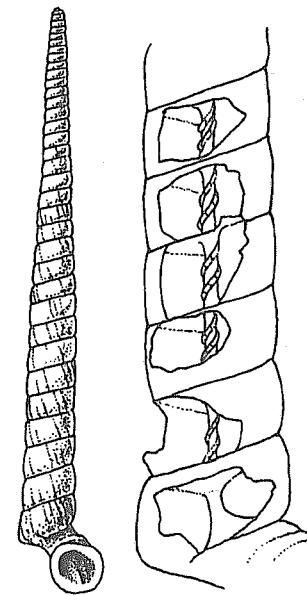


Fig. 507. *Tenuistemma lateralis* (L. Pfeiffer, 1860).  
Yunque, Cuba. Phil. No. 71540.

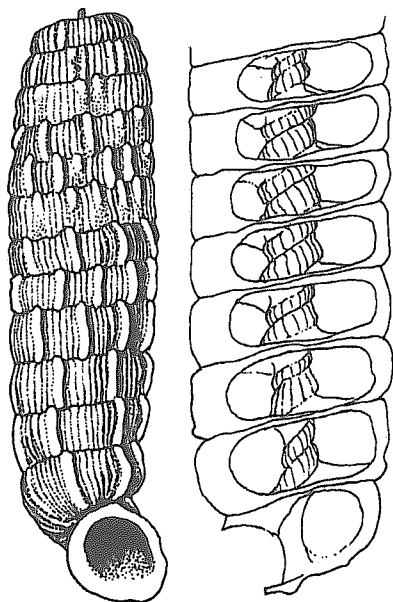


Fig. 508. *Pleurostemma geminata* (L. Pfeiffer, 1870).  
Cayo del Rey, Cuba. Phil. No. 147648.

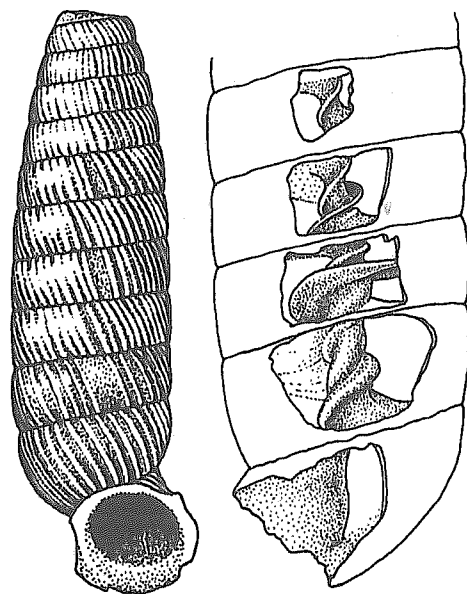


Fig. 509. *Esochara strangulata* (L. Pfeiffer, 1856).  
Lomas de Candela, Havana Prov., Cuba. Phil. No. 159456.

margins. Columella slender, with finely granulate surface and 2 weak lamellae, crossed by narrow, irregular incisions. Umbilicus absent. Height 25-28, diam. 4 mm [27.2 × 4.0 (with aperture) mm].

DISTRIBUTION. E Cuba. 1 or 2 spp.

*Pleurostemma* Pilsbry, 1941  
Fig. 508

Pilsbry, 1941: 70 (*Gongylostoma* sect.). Jaume & Torre, 1976: 119.

TYPE SPECIES — *Cylindrella geminata* L. Pfeiffer, 1870; OD.

Shell decollated, cylindrical, stout, of 12-14 (after decollation) flattened whorls. Last whorl weakly carinated. Color corneous, ribs white. Postembryonic whorls with hollow main ribs, and with 3-10 very thin, sharp, lamellar riblets in interspaces. Aperture subcircular, with trumpet-shaped margins. Columella with 2 spiral thickenings having widely spaced radial incisions. Umbilicus closed. Height 13.5-31.0, diam. 2.5-5.0 mm (19.5 × 3.5 mm).

DISTRIBUTION. E Cuba. 12 spp. & subspp.

*Esochara* Pilsbry et Vanatta, 1898  
Fig. 509

Pilsbry & Vanatta, 1898: 271, 276 [*Urocoptis* (*Gongylostoma*); sect.]. Jaume & Torre, 1976: 105 (*Pycnoptychia* subg.).

TYPE SPECIES — *Cylindrella strangulata* L. Pfeiffer, 1856; OD.

Shell decollated, subcylindrical, rather thin, lustreless, of 9-11 (after decollation) flattened whorls. Last whorl with thread-like basal keel. Color yellowish to light-corneous. Postembryonic whorls with fine, regular radial ribs. Aperture subcircular or irregularly ovate; upper margin noticeably straightened; margins thin, expanded and narrowly reflexed. Columella with 2 lamellae (upper sometimes vestigial), lower minutely denticulate in upper whorls, then expanding in broad plate bisecting cavity in 1 or 2 submedian whorls, reduced again below. Height 12.0-26.5, diam. 2.4-6.3 mm (21.2 × 6.1 mm).

DISTRIBUTION. W Cuba. 7 spp. & subspp.

*Teneria* Jaume et Torre, 1972  
Fig. 510

Jaume & Torre, 1972: 1597; 1976: 74.

TYPE SPECIES — *Cylindrella teneriensis* L. Pfeiffer, 1865; OD.

Shell subcylindrical, rather thin, of 12-13 (after decollation) whorls. Last whorl without basal keel. Color corneous with white streaks. Postembryonic sculpture of fine irregular ribs; ribs by 2-3 gathered in one tuft united below suture by white thickening. Aperture solute, circular, with reflexed margins. Columella with 2 lamellae; lower stronger, being strongest within 3rd and 4th whorls from below; upper serrated — initially densely, upward more spaced but setae becoming sharper. Umbilicus absent. Height 11-13, diam. 2.2-2.6 mm (11.6 × 2.5 mm).

DISTRIBUTION. W Cuba. 1 sp.

*Sectilumen* Pilsbry et Vanatta, 1898  
Fig. 511

Pilsbry & Vanatta, 1898: 271, 276 [*Urocoptis* (*Gongylostoma*); sect.]. Jaume & Torre, 1976: 83.

TYPE SPECIES — *Cylindrella ornata* L. Pfeiffer, 1859; monotypy.

Shell decollated, cylindrical, rather solid, of 10-12 (after decollation) flat whorls, separated by deeply channeled suture. Basal keel absent. Color corneous, with diffused, irregular white streaks. Postembryonic whorls with hair-like, dense radial riblets which become fused into distantly spaced white nodules under suture. Aperture solute, rounded, with somewhat thickened, shortly reflexed margins. Columella with 2-3 lamellae, upper cord-like, lower acute and spinose; in middle whorls there are broad parietal and low basal lamellae. Height 10-12, diam. 2.5-3.0 mm (11.5 × 2.7 mm).

DISTRIBUTION. E Cuba (Oriente Prov.). 1 sp.

*Bialasmus* Jaume et Torre, 1972

Jaume & Torre, 1972: 1592; 1976: 70.

TYPE SPECIES — *Bialasmus bilamellata* Jaume et Torre, 1972; OD.

"Small mollusks having ... a biplicated

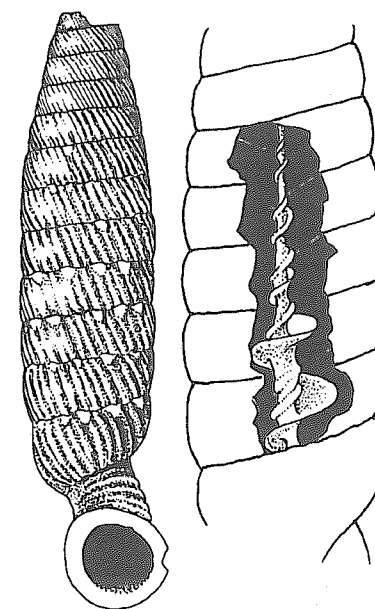


Fig. 510. *Teneria teneriensis* (L. Pfeiffer, 1865).  
La Teneria, Cuba. Paris.

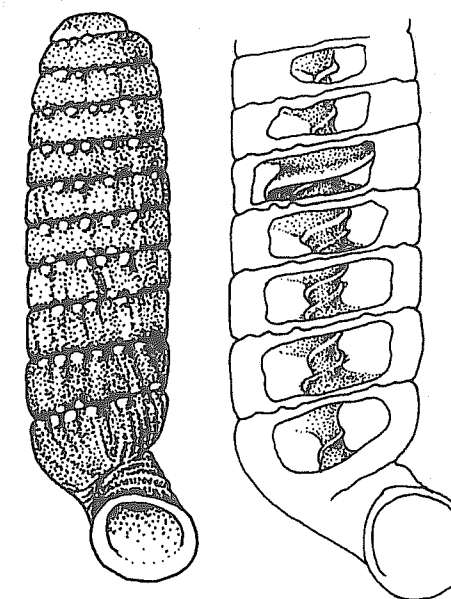


Fig. 511. *Sectilumen ornatus* (L. Pfeiffer, 1859).  
Yateras, Cuba. Phil. No. 72003.



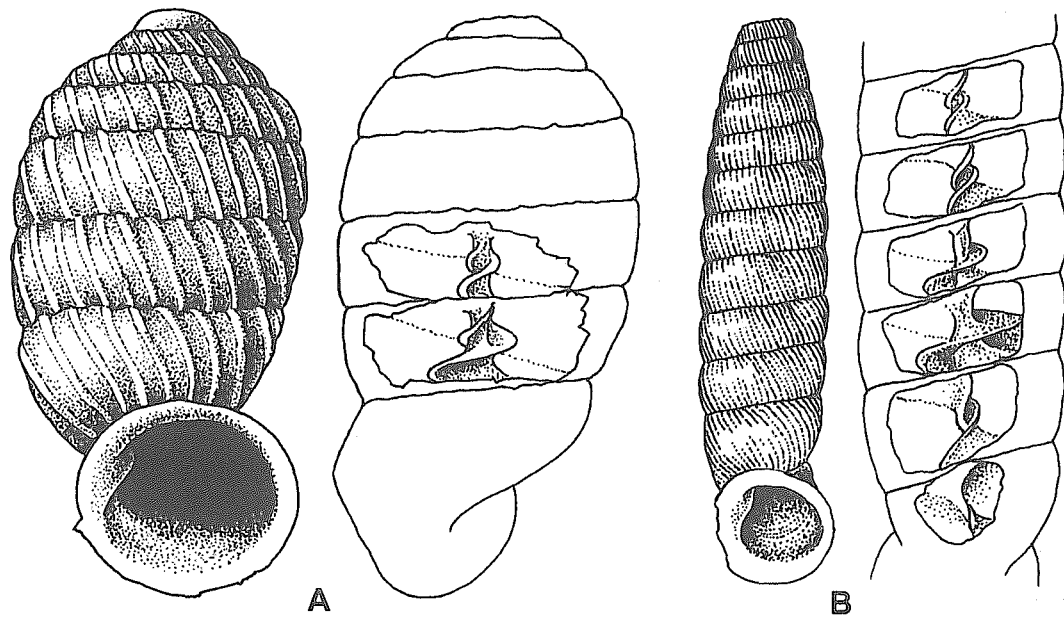


Fig. 512. A — ! *Centralia alvearis* (Torre, 1912). La Puntilla, Remedios, Cuba. Paris. B — ! *Centralia intuscoarctata* (Torre, 1911). Llanadas, S Canoa, Cuba. Holotype. Phil. No. 107713a.

lamella; the posterior [i.e. upper — A. Sch.] lamella is very broadly expanded in the middle whorls of the adult spire, while the anterior lamella, which is narrow, is provided with slender, long, protractively curved, rounded, fanglike spines." (Jaume & Torre, 1976: 70).

DISTRIBUTION. W Cuba (Pinar del Rio Prov.). 3 spp.

*Centralia* Jaume et Torre, 1972  
Fig. 512

Jaume & Torre, 1972: 1593; 1976: 70.

— *Mimiaxis* Jaume et Torre, 1972: 1593 [*Centralia* subg.; t.-sp. *Urocoptis* (*Gongylostoma*) *intuscoarctata* Torre, 1911; OD].

TYPE SPECIES — *Centralia* (*Centralia*) *bonachensis* Jaume et Torre, 1972; OD.

Shell entire or decollated, slender, subcylindrical or narrowly fusiform to pupiform, obese, rather thin or moderately solid, of 8-13 (after decollation) moderately convex whorls. Last whorl without basal keel. Color brown, ribs lighter. Embryonic whorls smooth, later with crowded or more or less distantly spaced, regular ribs. Aperture ad-

nate, subcircular, with more or less widely reflexed, variously thickened margins. Columella rather narrow, twisted, with 2 lamellae: lower very greatly expanded inside penultimate or 3rd from below whorl; its lower end visible in aperture at standard position of shell. Umbilicus closed. Height 13-25, diam. 5-8 mm (*alvearis*: 15.6 × 7.7 mm; *intuscoarctata*: 24.7 × 5.5 mm).

DISTRIBUTION. E and Central Cuba. 28 spp. & subspp.

REMARK. Jaume & Torre (1972: 1593) have divided this genus into 2 subgenera: *Centralia* s. str. with "major lamella not greatly expanded" (20 spp. & subspp.) and *Mimiaxis* with "major lamella greatly expanded" (8 spp. & subspp.). Taking into consideration the variability of species I do not think that this not well-defined difference is enough for separation of subgenera.

*Amphistemma* Jaume et Torre, 1972  
Fig. 513

Jaume & Torre, 1972: 1634; 1976: 108.

TYPE SPECIES — *Urocoptis* (*Idiostemma*) *pilsbryana* Ramsden, 1914; OD.

Shell decollated, subcylindrical-fusiform, rather solid, of 16 (after decollation) slightly convex whorls. Last whorl with very weak basal keel. Color corneous. Postembryonic sculpture of thin, hollow, distantly spaced, radial ribs crossed, together with intercostal spaces, by very thin, wavy spiral lines. Aperture obliquely ovate, with slightly thickened, shortly reflexed margins. Columella in early whorls slender, slightly twisted; in later whorls there are 2 interrupted, blade-like lamellae, rapidly increased in size and thickness. Height 15-16, diam. 3.8-4.2 mm (15.5 × 4.0 mm).

DISTRIBUTION. E Cuba. 1 sp.

*Idiostemma* Pilsbry et Vanatta, 1898

Pilsbry & Vanatta, 1898: 270, 275 (*Urocoptis* subg.). Jaume & Torre, 1976: 109.

TYPE SPECIES — *Cylindrella uncata* L. Pfeiffer, 1859; OD.

Shell decollated, subcylindrical, rather solid, of 10-15 (after decollation) flattened whorls. Last whorl without basal keel. Postembryonic whorls ribbed; ribs occupy entire whorl or only upper portion. Aperture usually, though not always, solute, obliquely ovate, with peristome thickened, expanded, and reflexed. Columella armed with pairs of hooks or flat nodes, or girt by wide callous band or double cord bearing oblique nodes or riblets. Umbilicus closed.

DISTRIBUTION. E Cuba.

*Idiostemma* (*Maceo*)  
Pilsbry et Vanatta, 1898)  
Fig. 514

Pilsbry & Vanatta, 1898: 270, 175 [*Urocoptis* (*Idiostemma*); sect.].

TYPE SPECIES — *Cylindrella interrupta* L. Pfeiffer, 1857; OD.

Shell of about 10 (after decollation) whorls. Color corneous. Postembryonic whorls with strong, distantly spaced, hollow axial ribs, stronger developed at suture, and fine radial hair-like riblets extending over both ribs (ribs sometimes smooth) and intercostal spaces. Aperture solute, obliquely ovate to subcircular, margins reflexed, expanded, variously thickened. Columella in early whorls simple, slender and somewhat twisted. In succeeding whorls twist develops

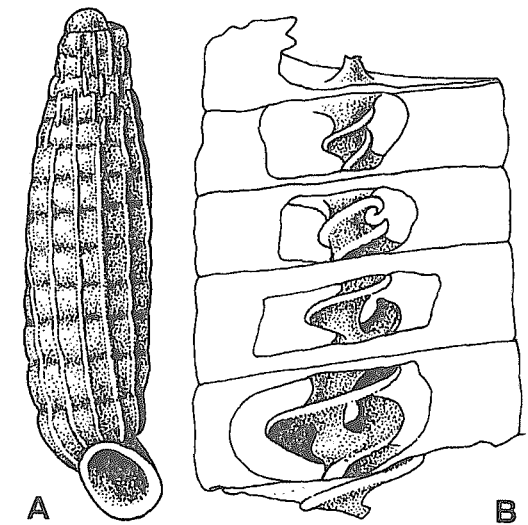


Fig. 513. *Amphistemma pilsbryana* (Ramsden, 1914). La Hembrita, Monte Toro, Cuba. A — holotype. Phil. No. 117473a. B — fragment of paratype showing structure of columella. Phil. No. 117473.

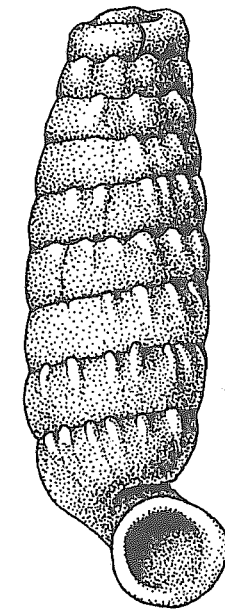


Fig. 514. *Idiostemma* (*Maceo*) *interrupta* (L. Pfeiffer, 1857). Cuba. Leiden.

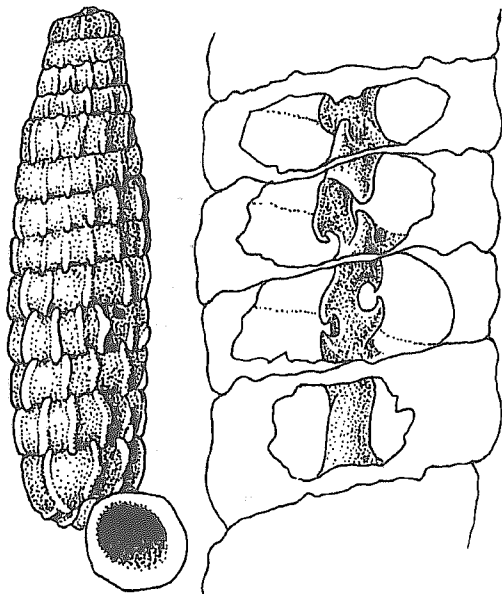


Fig. 515. *Idiostemma (Idiostemma) uncata* (L. Pfeiffer, 1859).  
Yateras, Cuba. Paris.

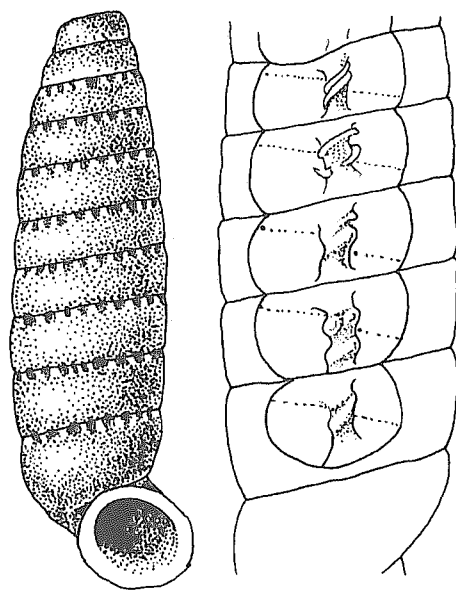


Fig. 516. *Carcinostemma perlata* (L. Pfeiffer, 1859).  
Yateras, Cuba. Phil. No. 71555.

into median lamella which in 3rd to 5th whorls from below concave in upper portion and slopes convexly in lower portion; there this lamella ornamented with fine, retractorily curved, granulose radial riblets. In last whorl lamella disappears. Height 11-14, diam. 2.8-3.4 mm ( $10.5 \times 3.0$  mm).

DISTRIBUTION. E Cuba. 1 sp. with 2 subsp.

*Idiostemma (Idiostemma s. str.)*  
Fig. 515

Shell rather solid, of about 14 (after decollation) flattened whorls. Color corneous, ribs white. Postembryonic sculpture consists of slightly retractorily slanting, distantly spaced, hollow axial ribs and fine, irregular incremental lines extending over ribs and intercostal spaces. Aperture solute, obliquely oval, peristome expanded, thickened, reflexed. Columella in early whorls slender and twisted; later armed with pairs of hooks or flat nodes, or girt by wide callous band or double cord bearing oblique nodes or riblets. In penultimate whorl this arrangement much reduced, and in last whorl axis merely twisted. Height 16-20, diam. 4-6 mm ( $17.5 \times 4.2$  mm).

DISTRIBUTION. E Cuba. 7 spp.

*Carcinostemma* Jaume et Torre, 1972  
Fig. 516

Jaume & Torre, 1972: 1634; 1976: 108.

TYPE SPECIES — *Cylindrella perlata* L. Pfeiffer, 1859; OD.

Shell nearly always decollated, subcylindrical, moderately solid, of 10-11 nearly flat whorls. Color corneous. Postembryonic whorls nearly smooth, with just remnants of riblets below suture. Aperture solute, obliquely-ovate, with reflexed, expanded, thickened margins. Columellar lamella transformed into system of blunt hooks, depressions and short vertical plates, particularly in 2nd-3rd whorls from below. Umbilicus closed. Height 12-13, diam. 3.2-3.5 mm ( $12.2 \times 3.3$  mm).

DISTRIBUTION. E Cuba. 2 spp.

*Planostemma* Jaume et Torre, 1972  
Fig. 517

Jaume & Torre, 1972: 1641; 1976: 115.

TYPE SPECIES — *Cylindrella laevigata* L. Pfeiffer, 1859; OD.

Shell decollated, subcylindrical, thin, translucent, of 12-13 (after decollation) nearly flat whorls. Last whorl with weak cord-like basal keel. Postembryonic whorls nearly smooth, with only traces of ribs, intensified into riblets on last part of body whorl. Aperture adnate or solute, obliquely-ovate, with reflexed, expanded and thickened margins. Columella slender, twisted in early whorls; in middle whorls bears pincer-like nodules becoming weaker on penultimate whorl and disappearing on last whorl, where columella strong and twisted. Umbilicus absent. Height 15-18, diam. 4.5-5.0 mm ( $17.4 \times 5.0$  mm).

DISTRIBUTION. E Cuba. 5 spp. & subsp.

*Liocallonia* Pilsbry, 1902

Pilsbry, 1902 (1902-1903): 201 (*Gongylostoma* subg.).

TYPE SPECIES — *Cylindrella vineta* L. Pfeiffer, 1863; OD.

Shell usually decollated, thin, subcylindrical to obesely fusiform, sometimes translucent, of 8-16 flattened to moderately convex whorls. Color corneous to brown. Postnuclear sculpture obsolete to lamellosely ribbed. Aperture circular or subtriangular, with shortly reflexed margins. Columella with 3 lamellae, upper one thin, lower may be denticulated or even spinose. Umbilicus absent.

DISTRIBUTION. W Cuba.

*Liocallonia (Cenocoptis)*  
Jaume et Torre, 1972)  
Fig. 518

Jaume & Torre, 1972: 1612; 1976: 88.

TYPE SPECIES — *Urocoptis cuestai* Torre, 1930; OD.

Shell subcylindrical to fusiform-cylindrical, whorls flattened, up to 20 in number (when entire). Color corneous, ribs white. Postnuclear sculpture of strong, somewhat lamellar riblets. Aperture free, circular. Columellar lamellae rapidly descending and almost equal; penultimate whorl with only one lamella, disappearing in last whorl. Height 16.0-20.7, diam. 3.0-3.3 mm ( $19.8 \times 3.5$  mm).

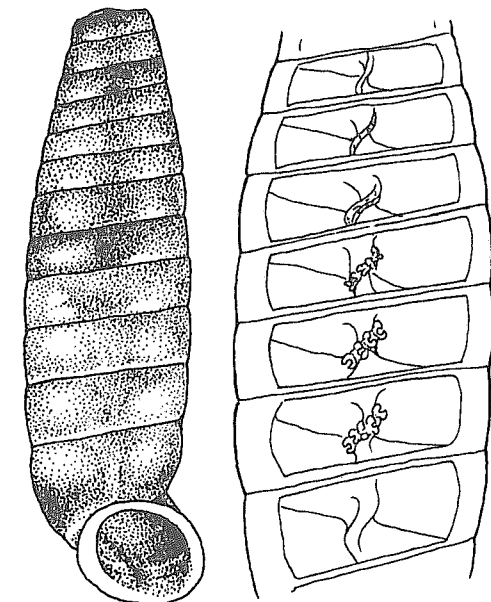


Fig. 517. *Planostemma laevigata* (L. Pfeiffer, 1859).  
Monte Toro, Cuba. Phil. No. 72963.

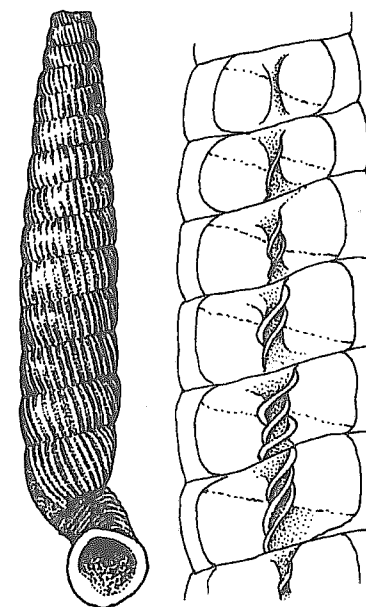


Fig. 518. *Liocallonia (Cenocoptis) cuestai* (Torre, 1930).  
Mogote, km 14 road to Viñales, Cuba. Holotype. Phil. No. 147835a.

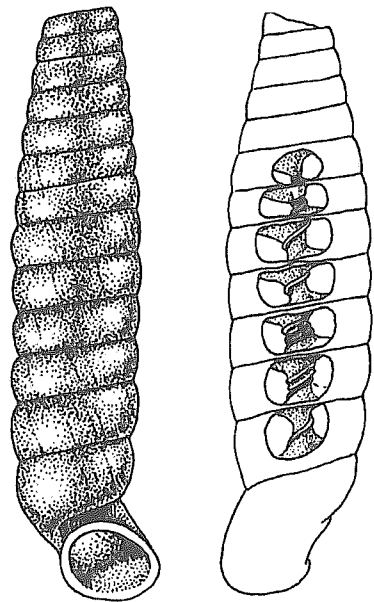


Fig. 519. *Liocallonia (Liocallonia) vincta* (L. Pfeiffer, 1863).  
Hoto Sagua, Cuba. Phil. No. 73030.

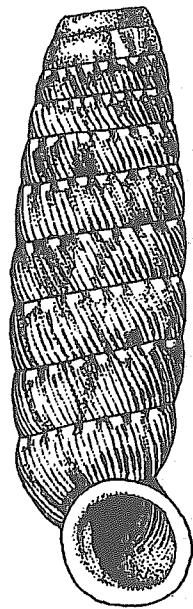


Fig. 520. *Paracallonia albocrenata* (L. Pfeiffer, 1863).  
Cuba. Phil. No. 73035.



Fig. 521. *Organocoptis integra* (L. Pfeiffer, 1856).  
La Finco, San Diego los Baños, Pinar del Rio Prov., Cuba. Phil. No. 159459.

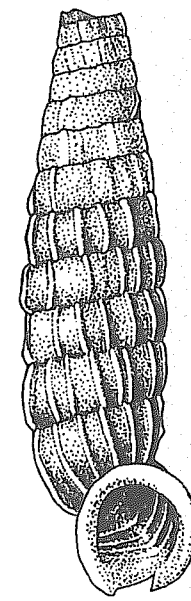


Fig. 522. *Acrocoptis florenciana* (Pilsbry, 1929).  
S slope ridge N of Florencia, Camagüey Prov., Cuba. Holotype. Phil. No. 147872a.

DISTRIBUTION. W Cuba. 30 spp. & subspp.

*Liocallonia (Liocallonia) s. str.*  
Fig. 519

Shell nearly cylindrical, thin, shining, of 13-15 (after decollation) more or less convex whorls. Color corneous to brown. Post-nuclear sculpture very weak, of fine irregular wrinkles. Aperture circular, free, with scarcely thickened and shortly reflexed whorls. Columella smooth in last whorl, in penultimate with 1, in next with 2 (lower sometimes minutely serrated), in following — 3 thread-like lamellae; upward 1-2 lamellae remain. Height 11.0-17.5, diam. 2.6-3.5 mm (15.0 × 2.9 mm).

DISTRIBUTION. W Cuba. 20 spp. & subspp.

? *Liocallonia (Jaumea)*  
Jaume et Torre, 1972)

Jaume & Torre, 1972: 1612; 1976: 87.

TYPE SPECIES — *Liocallonia (Jaumea) jaumei* Jaume et Torre, 1972; OD.

“Shell pupiform, stout, horn colored with the posterior portion of the peristome yellowish, while the anterior portion and the interior of aperture are brown. Nuclear whorls decollated ... Postnuclear whorls decidedly inflated, strongly, rounded, and marked by slender narrow, retractively slanting axial ribs, which are about one-fourth to one-fifth as wide as the spaces that separate them. Suture well constricted. Periphery with strong broad rounded cord which is rendered crenulated by the axial riblets. Base narrow with deep umbilical pit crossed by slender, lamellose axial riblets. The last whorl is solute for about one-fifth of turn. Aperture subtriangular; peristome expanded and reflected. The columella bears three strong lamellae, of which the posterior is the widest and the other two grade in series. On the last whorl these lamellae become decidedly reduced. The anterior lamella is distantly denticulated in the early whorls.

The type, U.S. Nat. Museum No. 537465 was collected ... at El Zumbido, south of Pico Grande, Sierra de San Andrés, Consolación del Norte, Pinar del Rio. It has 8.6 whorls remaining and measures:

Height, 13.1 mm.; greater diameter, 5.9 mm.” (Jaume & Torre, 1976: 87-88).

DISTRIBUTION. W Cuba (Pinar del Rio Prov.). 1 sp.

REMARK. I did not see shells of this species, but, judging by above description, it differs markedly from other representatives of *Liocallonia* (it somewhat remains *Centralia alvearis* in outline — see Fig. 512A in this book). Therefore, I am not sure if *L. jaumei* really belongs to this genus.

*Paracallonia* Pilsbry, 1903  
Fig. 520

Pilsbry, 1903 (1902-1903): 197 [*Urocoptis (Gongylostoma)*; sect.]. Jaume & Torre, 1976: 95.

TYPE SPECIES — *Cylindrella albocrenata* L. Pfeiffer, 1863; OD.

Shell decollated, subcylindrical, thin, translucent, of 10-11 (after decollation) whorls. Last whorl weakly carinated. Color marbled. Postembryonic whorls finely ribbed; below suture some ribs connected by white nodules. Aperture circular, with

slightly thickened, shortly reflexed margins. Columella with 3 lamellae subequal in median whorls, lower lamella denticulate, at least in upper whorls. Height 11-14, diam. 3-4 mm (11.0 × 3.0 mm).

DISTRIBUTION. W Cuba. 1 sp. with 2 subspp.

*Organocoptis* Jaume et Torre, 1972  
Fig. 521

Jaume & Torre, 1972: 1632; 1976: 106.

TYPE SPECIES — *Cylindrella integra* L. Pfeiffer, 1856; OD.

Shell slender, turreted, thin, of 16-18 moderately convex whorls. Last whorl without basal keel. Embryonic whorls smooth. Postembryonic whorls with more or less distantly spaced thread-like riblets. Aperture subcircular, with thin or slightly thickened, a little reflexed margins. Columella trilamellate, lowest lamella is strongest, with largely spaced minute spines. Height 12-17, diam. 1.5-3.8 mm (15.0 × 3.0 mm).

DISTRIBUTION. W Cuba. 15 spp. & subspp.



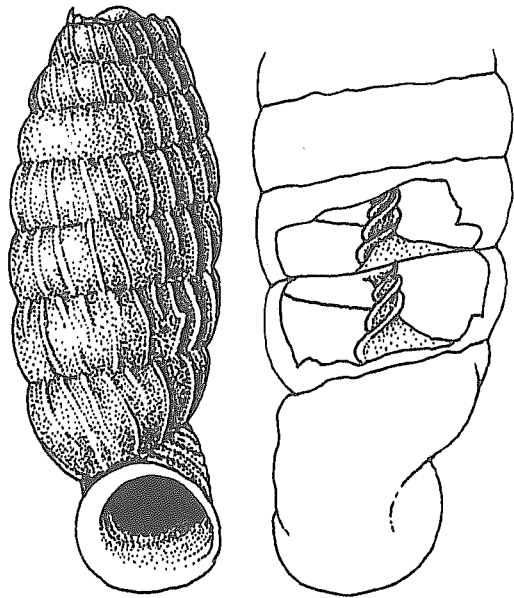


Fig. 523. *Callocoptis abdita* (Arango, 1880).  
Cuba. Paris.

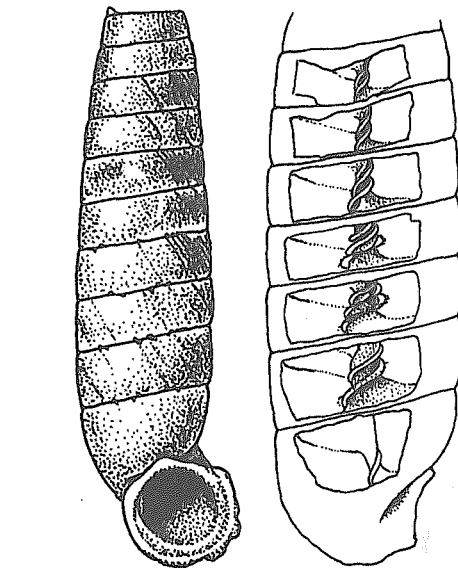


Fig. 524. *Pycnoptychia humboldti* (L. Pfeiffer, 1840).  
Cuba. Phil. No. 72982.

*Acrocoptis* Jaume, Torre, 1972  
Fig. 522

Jaume & Torre, 1972: 1609; 1976: 85.

TYPE SPECIES — *Urocoptis delectabilis florenciana* Pilsbry, 1929; OD.

Shell decollated, subcylindrical, thin, of 11-13 (after decollation) slightly convex whorls. Last whorl without basal keel. Color corneous, ribs white. Postembryonic sculpture of hollow (mostly), distantly spaced ribs. Aperture subcircular, with thin, broadly reflexed and expanded margins. Columella with 3 lamellae; upper strongest and at least partly serrulated. Umbilicus absent. Height 20-25, diam. 5.5-6.0 mm (23.0 × 5.7 mm).

DISTRIBUTION. E and Central Cuba. 6 spp.

*Callocoptis* Jaume et Torre, 1972  
Fig. 523

Jaume & Torre, 1972: 1610; 1976: 86.

TYPE SPECIES — *Cylindrella abdita* Arango, 1880; OD.

Shell decollated, obesely fusiform, thin, of about 7 (after decollation) rather convex whorls. Last whorl with very weak basal keel. Color brown, ribs white. Postembryonic sculpture of widely spaced, hollow, irregular ribs with vague microscopical granulation in interspaces. Aperture round, with well reflexed, thin margins. Columella with 3 lamellae; uppermost largest, serrulated. Height 13-17, diam. 4-6 mm (15.9 × 5.6 mm).

DISTRIBUTION. W Cuba. 4 spp.

*Pycnoptychia* Pilsbry et Vanatta, 1898  
Fig. 524

Pilsbry & Vanatta, 1898: 271, 275 [*Urocoptis* (*Gongylostoma*); sect.]. Jaume & Torre, 1976: 102.

TYPE SPECIES — *Cylindrella humboldtiana* (sic!) L. Pfeiffer, 1840; OD.

Shell decollated, pillar-shaped, moderately solid, of 9-12 (after decollation) flattened whorls. Last whorl not descending, rounded beneath, basal keel as low cord or obsolete. Color brown, corneous or reddish.

Postembryonic sculpture of fine striae or delicate, regular riblets. Aperture free, circular, with expanded margins. Columella with 3 to 8 lamellae, increasing in size downward and more or less serrulated or denticulated in their broadest expansion. Umbilicus absent or tiny. Height 18-32, diam. 5-8 mm (24.9 × 6.0 mm).

DISTRIBUTION. W Cuba. Over 20 spp. & subspp.

*Poeycoptis* Jaume et Torre, 1972  
Fig. 525

Jaume & Torre, 1972: 1619; 1976: 93.

TYPE SPECIES — *Siphonostoma lituus* Gould, 1842; OD.

Shell decollated, subcylindrical to fusiform, with truncated-conic upper part, rather solid but somewhat translucent, of 13-15 (after decollation) slightly convex whorls. Last whorl without basal keel. Color light-corneous. Early postembryonic whorls smooth, later finely rib-striated. Aperture ovate, oblique, with thin margins. Columella simple in last whorl, in penultimate — with 2, further upward with 3 lamellae having smooth edges; median less strongly developed than other two. Height 17-20, diam. 3.5-4.2 mm [18 (estimated) × 4.0 mm].

DISTRIBUTION. Cuba. About 10 spp. & subspp.

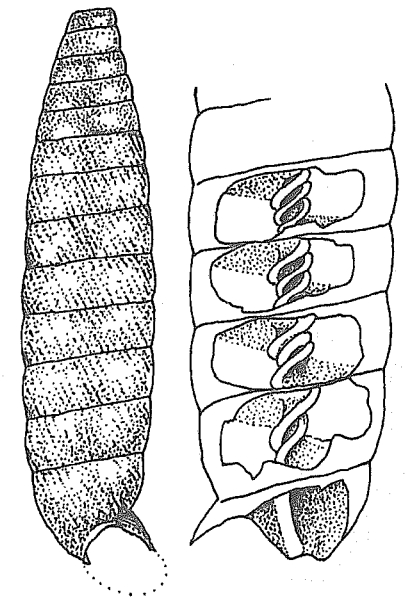


Fig. 525. *Poeycoptis lituus* (Gould, 1842).  
Cuba. Paris.

*Nodulia* Jaume et Torre, 1972  
Fig. 526

Jaume & Torre, 1972: 1621; 1976: 95.

TYPE SPECIES — *Cylindrella vignalensis* L. Pfeiffer, 1863; OD.

Shell decollated, obesely fusiform, moderately thin, of 7-10 (after decollation) rather convex whorls. Color uniformly corneous. Upper whorls finely, densely costate, last 5-6 whorls with rather distantly spaced, rounded ribs, sometimes with subsutural nodules between them. Aperture subcircular, free, adnate, with more or less broadly reflexed, expanded, thin margins. Columella thin, trilamellate; lowest lamella strongest. Edges of lamellae smooth. Height 15-23, diam. 5-6 mm (17.6 × 6.0 mm).

DISTRIBUTION. Cuba. 15 spp. & subspp.

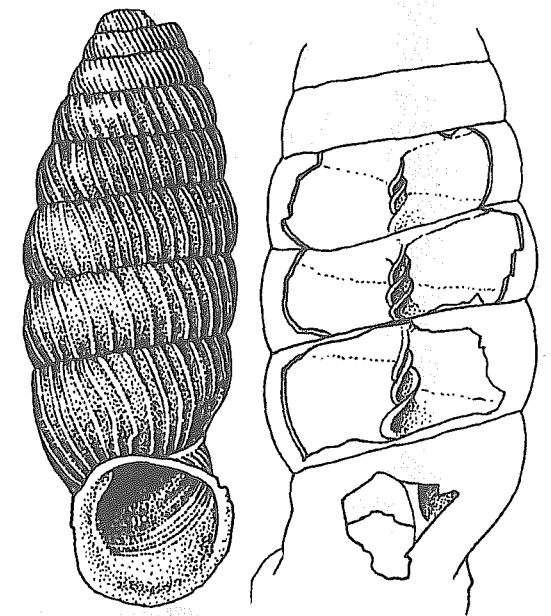


Fig. 526. *Nodulia vignalensis* (L. Pfeiffer, 1863).  
Viñales, Cuba. Phil. No. 141888.



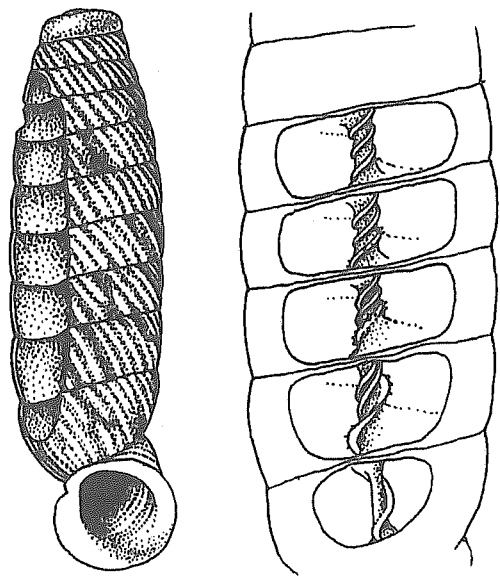


Fig. 527. *Trilamellaxis proteus* (Torre, 1911). Seibabo, Yaguajay, Cuba. Lectotype. Phil. No. 107708a.



Fig. 528. *Badiofaux trilamellata* (L. Pfeiffer, 1864). Cuba. Phil. No. 73002.

*Trilamellaxis* Jaume et Torre, 1972  
Fig. 527

Jaume & Torre, 1972: 1623; 1976: 98.

TYPE SPECIES — *Urocoptis* (*Gongylostoma*) *proteus* Torre, 1911; OD.

Shell decollated, subcylindrical, thin, translucent, of 10-12 (after decollation) whorls; upper slightly convex, lower flattened. Color variously marbled. Postnuclear sculpture of smoothed to sharp ribs. Aperture circular, with broadly reflexed, thin margins. Columella within last whorl with 1 lamella, in penultimate whorl and further upward — with 3 lamellae; lower (present in last whorl) sparsely serrated in 3rd-5th whorls. Height 15-22, diam. 4-6 mm (20.0 × 5.5 mm).

DISTRIBUTION. Cuba. 20 spp., subspp. & forms.

*Badiofaux* Pilsbry, 1941  
Fig. 528

Pilsbry, 1941: 70 (*Gongylostoma* subg.). Jaume & Torre, 1976: 100.

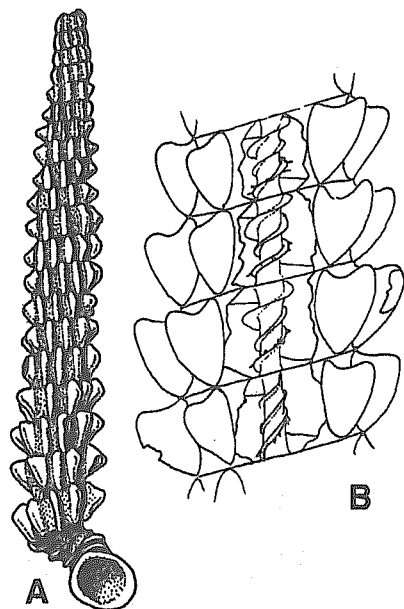


Fig. 529. A — ! *Callonia gemmata* (Pilsbry, 1927). Pinar del Rio, Cuba. Moscow. B — *Callonia elliotti* (Poey, 1858). Sierra de Guane, Cuba. Moscow No. Lc-23701 (Paris).

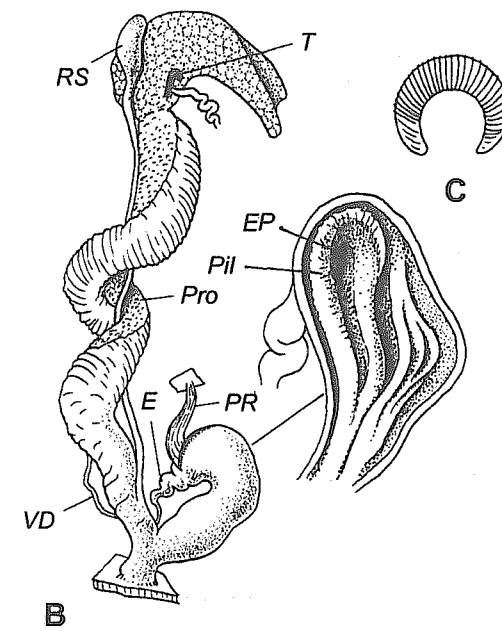
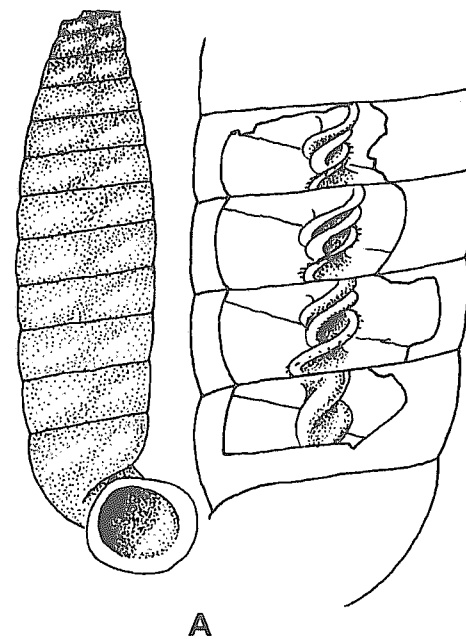


Fig. 530. A — *Gongylostoma elegans* (L. Pfeiffer, 1839). Shell: Yumuri Valley, E edge, Matanzas, Cuba. Moscow No. Lc-23713 (Phil.). B, C — ! *Gongylostoma peccatrix* Jaume et Torre, 1972. Pinar del Rio, October 29, 1965. B — reproductive tract and interior of penis. C — jaw. Moscow No. Lc-23702 (SPb).

TYPE SPECIES — *Cylindrella trilamellata* L. Pfeiffer, 1864; OD.

Shell decollated, slender, cylindrical, a little tapering upward, of 10-13 (after decollation) flattened whorls. Last whorl without basal keel. Color corneous. Postembryonic whorls regularly rib-striated. Aperture circular, with thin, more or less reflexed margins. Columella with 3 lamellae, in penultimate whorl — with only 1; in next (upward) whorl original (lower) lamella acquires thorns with tips directed toward aperture. Then thorns turn to sharp needles and become more spaced. Remaining 2 lamellae may be strong or sometimes reduced almost to disappearance. Umbilicus closed. Height 16-24, diam. 3.5-5.5 mm (17.9 × 3.7 mm).

DISTRIBUTION. W Cuba. About 10 spp. & subspp.

*Callonia* Crosse et Fischer, 1870  
Fig. 529

Crosse & Fischer, 1870: 18 (*Gongylostoma* subg.). Jaume & Torre, 1976: 84.

TYPE SPECIES — *Cylindrella elliotti* Poey, 1858; monotypy.

Shell sometimes decollated, slender, tower-shaped, thin, of 20-24 convex whorls. Last whorl lacking basal keel. Color brown, ribs white. Embryonic whorls smooth. Postembryonic sculpture of distantly spaced, strong, more or less triangular, hollow ribs. Aperture subcircular to ovate, free, solute, with thin, reflexed margins. Columella with 3 lamellae, upper largest in median whorls, lower sparsely serrated. Height 18-31, diam. 3.5-5.0 mm [20.0 × 3.8 (with ribs) mm].

DISTRIBUTION. W Cuba. 5 spp.

*Gongylostoma* Albers, 1950  
Fig. 530

Albers, 1950: 208 (*Cylindrella* subg.). Jaume & Torre, 1976: 76.

TYPE SPECIES — *Clausilia elegans* L. Pfeiffer, 1839; SD Martens in Albers, 1860.

Shell usually decollated, from short and swollen to long and fusiform, of 11-13 slightly convex whorls. Last whorl rounded or with indistinct keel. Color light-corneous to brownish, or with paler riblets on corne-

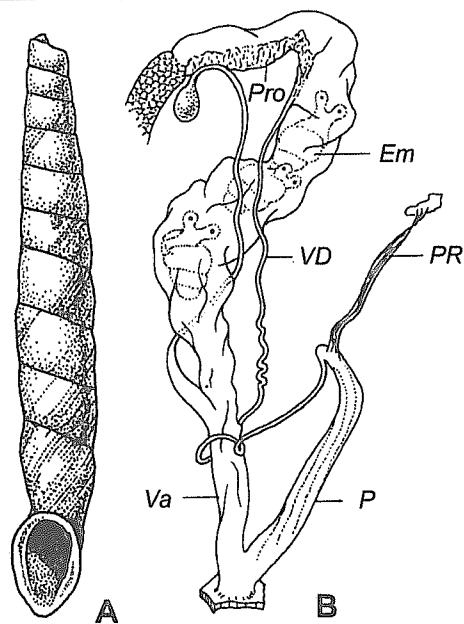


Fig. 531. A — !*Apoma gracilis* (Wood, 1828). Shell: Jamaica. SPb. B — *Apoma chemnitziana* (Férussac, 1821). Reproductive tract: Natural Bridge near Bog Walk, Jamaica. Phil. No. A 13816.

ous background; upper spire sometimes darker. Aperture adnate or projecting in more or less long neck. Columella with 1 or 2 principal lamellae; lower (at least in upper whorls) serrated, cut into teeth, or bearing spines directed radially or toward aperture; smaller lamella sometimes present between two other. Height 10-21, diam. 3-5 mm (16.8 × 4.2 mm).

Talon exposed, heavily pigmented. Vas deferens thin, entering very short epiphallus apically. Penis short, internally with U-shaped pilaster and a few longitudinal folds; epiphallic pore under apex of "U". Penial retractor attached to penis at base of epiphallus. Free oviduct somewhat expanded, moderately long; vagina short. Spermathecal stalk long, slender, cylindrical; reservoir elongated-ovate, reaching albumen gland.

DISTRIBUTION. W Cuba. About 25 spp. & subspp.

#### *Levistemma* Jaume et Torre, 1972

Jaume & Torre, 1972: 1571; 1976: 49.

TYPE SPECIES — *Levistemma peculiaris* Jaume et Torre, 1972; OD.

"... early whorls form long slender tapering spire, the earliest of which are expanded and more finely ribbed than the rest. The remaining whorls bear distantly spaced, hollow axial ribs, which, as well as the intercostal spaces, are axially crossed by slender hair thread. The strong ribs are thickened at the summit and the periphery. Suture deeply channeled. Last whorl solute. Base short, well rounded. Aperture obliquely oval; peristome reflected, expanded and thickened. The columella is slender, slightly twisted, without lamellation.

The type, U.S. Nat. Museum, No. 537678, was collected ... at Cañete; northwest of Baracoa, Oriente Province. It has 18 whorls remaining and measures: height, 16.7 mm; greater diameter, 3.5 mm." (Jaume & Torre, 1976: 49, 50).

DISTRIBUTION. E Cuba (Oriente Prov.). 1 sp.

#### APOMINAE Paul, 1982

Paul, 1982: 105.

Shell decollated, elongated-cylindrical to slenderly-conic. Last whorl usually a little uncoiled before aperture. Aperture free. Columella thin, solid, simple or with 1-2 lamellae. Parietal, basal and palatal lamellae absent.

Jaw of many narrow converging plaits.

Penis rather long, internally with longitudinal pilasters, without stimulator. Epiphallus absent. Penial retractor present or wanting. Flagellum absent. Spermathecal stalk lacking diverticle.

DISTRIBUTION. Jamaica, ? Swan and Grand Cayman Islands.

#### *Apoma* Beck, 1837

Fig. 531

Beck, 1837: 89 (*Clausilia* subg.).

— *Casta* Albers, 1850: 208 [*Cylindrella* subg.; t.-sp. *Helix* (*Cochlodina*) *chemnitzianum* Férussac, 1821; SD Martens in Albers, 1860].

TYPE SPECIES — *Turbo elongatus* Beck, 1837 [= *Helix* (*Cochlodina*) *chemnitzianum* Férussac, 1821]; monotypy.

Shell sinistral, decollated, very slender,

cylindrical-tapering, silky glossy, of 7-11 (after decollation; total number about 16) slightly convex whorls. Color white. Postembryonic whorls with regular, fine, dense, oblique rib-striation. Aperture free, elongated-ovate, somewhat oblique, with well reflexed margins; neck with subvertical crest. Columella simple, very slender, straight above, spirally coiled in later whorls. Umbilicus closed. Height 21-31, diam. 3-5 mm (27.0 × 3.5 mm).

Vas deferens unusually long, entering penis subapically. Penis nearly cylindrical, internally with high, narrow, slightly spiral, longitudinal folds. Penial retractor originating on diaphragm, attached subapically opposite to base of vas deferens. Uterus usually contains a few embryos with shells of about 3 whorls. Vagina of moderate length, somewhat expanded. Spermathecal stalk long, slender, slightly enlarged basally; reservoir small, lying on base of albumen gland.

DISTRIBUTION. Jamaica. 3-4 spp.

#### *Geoscala* Pilsbry et Vanatta, 1898

Fig. 532

Pilsbry & Vanatta, 1898: 272, 279 [*Urocoptis* (*Brachypodella*); sect.]. Paul, 1982: 105.

TYPE SPECIES — *Cylindrella seminuda* C. Adams, 1845; OD.

Shell decollated, narrowly fusiform or subcylindrical, thin, semitransparent, of 6-10 (after decollation; complete shell — up to 17.5) shouldered whorls. Last whorl with strong basal keel. Color whitish or shell colorless. Postapical whorls with strong, continuous or interrupted ribs. Aperture solute, circular, free, with thin, reflexed margins. Columella slender, straight. Height 6.5-10.5, diam. 1.9-2.6 mm (8.4 × 2.2 mm).

Vas deferens moderately long, entering penis (sub)terminally. Penis slender, long. Penial retractor inserting onto penis subapically. Free oviduct exceptionally short, vagina unusually long, somewhat expanded. Spermathecal stalk thin, moderately long, reservoir subglobular.

DISTRIBUTION. Jamaica. 3-4 spp.

#### ? *Cyclauchen* Pilsbry, 1930

Fig. 533

Pilsbry, 1930a: 245 (*Brachypodella* sect.).

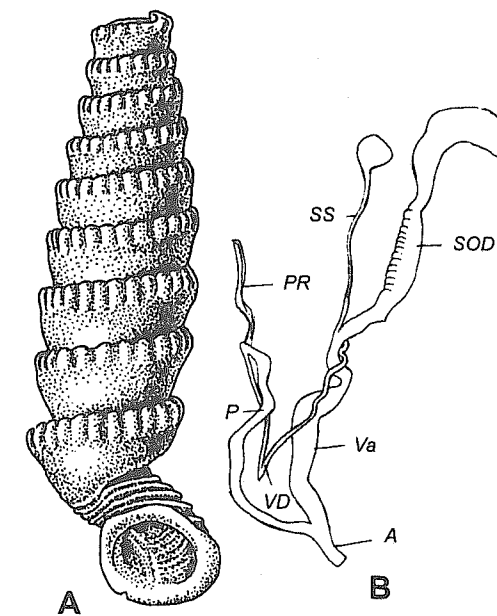


Fig. 532. *Geoscala seminuda* (C. Adams, 1845). A — shell: Jamaica. Leiden. B — reproductive tract. After Paul, 1982.

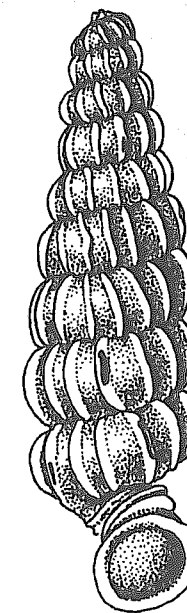


Fig. 533. *Cyclauchen insulaecygni* (Clapp, 1914). Little Swan Isl. Moscow No. Lc-23336 (Phil. No. 150708).

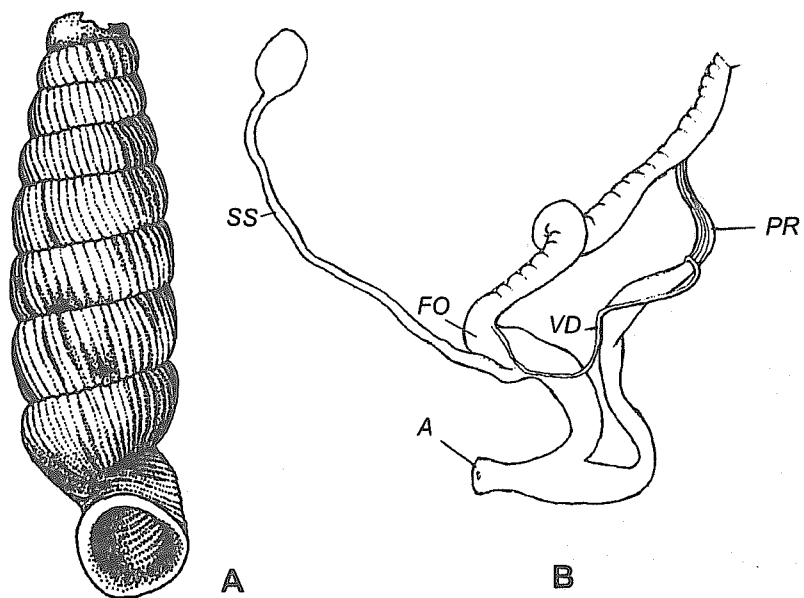


Fig. 534. *Simplicervix inornata* (C. Adams, 1849).  
A — shell: Jamaica. Leiden. B — reproductive tract. After Paul, 1982.

TYPE SPECIES — *Brachypodella insulaecygni* Clapp, 1914; OD.

Shell decollated, fusiform-conic, thin, somewhat translucent, of about 9-11 (after decollation) quite convex whorls. Last whorl rounded, without keel. Color pale-corneous to greyish, ribs white. Postembryonic whorls with strong, not crowded, hollow ribs. Aperture circular, with thin, reflexed margins. Columella slender, slightly sinuous, simple. Height 7-8, diam. 1.9-2.2 mm (7.0 × 2.0 mm).

DISTRIBUTION. Swan and Grand Cayman Islands. 2 spp.

REMARK. I tentatively assign this genus to Apominae only because of its conchological similarity with *Geoscala*.

*Simplicervix* Pilsbry, 1903  
Fig. 534

Pilsbry, 1903 : 94 (*Brachypodella* subg.). Paul, 1982: 117.

TYPE SPECIES — *Cylindrella inornata* C. Adams, 1849; OD.

Shell decollated, pillar-shaped, thin, of

7-10 (after decollation) convex whorls. Last whorl only slightly uncoiled, with or without weak basal keel. Color whitish. Postembryonic whorls densely and evenly radially striated, with oblique, arcuate, sharp ribs. Aperture free, rounded, variously oblique, very slightly reflexed and expanded. Columella simple, slender, slightly sinuous. Umbilicus tiny. Height 4.7-11.0, diam. 1.4-3.0 mm (10.5 × 2.9 mm).

Vas deferens moderately long, very thin, entering penis terminally. Penis rather long, slender. Penial retractor inserted upon penis apically. Free oviduct short, vagina noticeably longer. Spermathecal stalk narrow, cylindrical, reservoir ovate.

DISTRIBUTION. Jamaica. 3 spp.

*Mychostoma* Albers, 1850  
Fig. 535

Albers, 1850: 207 (*Cylindrella* subg.; part.).

TYPE SPECIES — *Cylindrella alba* C. Adams, 1849; SD Pilsbry, 1904.

Shell decollated, cylindrical or pillar-shaped, translucent, of 13-15 (after decol-

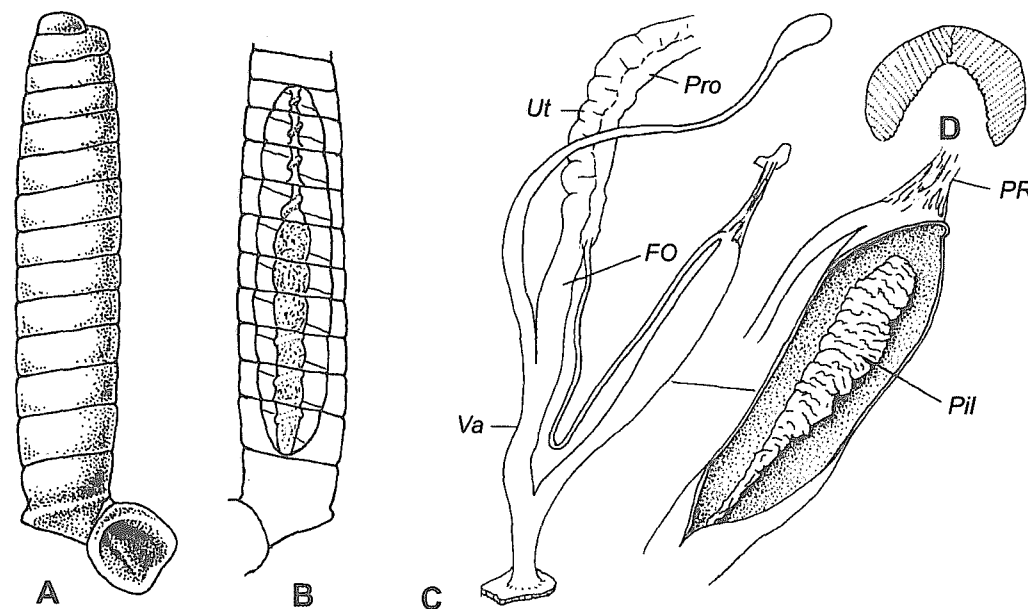


Fig. 535. *Mychostoma alba* (C. Adams, 1849).  
A — shell: Jamaica. Leiden. B, C, D — N slope of Dolphin Head, south of Askenish, Hanover Parish, Jamaica, February 7, 1997. B — structure of columella. C — distal part of reproductive tract and interior of penis. D — jaw. Moscow No. Lc-23734.

lation) flattened whorls. Last whorl projecting, with sharp, crenulated basal keel. Color white, or shell colorless, glass-like. Postnuclear sculpture of fine, silky rib-striation. Aperture solute, rounded or squarish, with shortly reflexed margins. Columella straight, in upper whorls with lamella; then expanded and variously sculptured in lower half. At least one species possessing structure somewhat resembling clausilium of Clausiliidae: 5th whorl from base with flexible tongue-shaped process inside, continuous above, at its origin, with solid columella, but below hanging free in cavity. Umbilicus closed. Height 9.5-40.5, diam. 2-6 mm (13.0 × 2.3 mm).

Jaw arched, of thin, numerous, narrow, converging plaits.

Vas deferens thin, entering penis apically and laterally. Penis moderately long, cylindrical-fusiform, with very thin, translucent walls; internally with large longitudinal, coarsely corrugate pilaster. Penial retractor arising on diaphragm, attached to penis at base of vas deferens. Free oviduct and vagina of about equal length. Spermathecal stalk slender, subcylindrical, reservoir small, elongated.

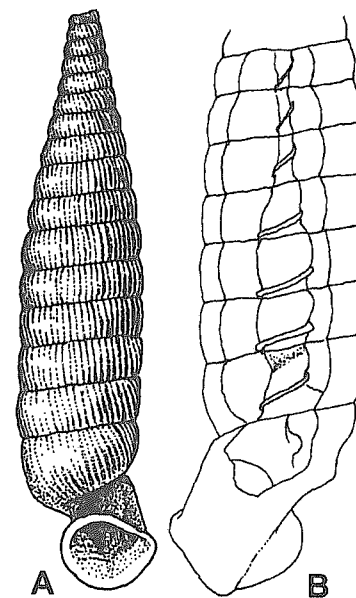


Fig. 536. *Ischnostrophina latiaxis* (Pilsbry, 1933).  
Del Monte's coffee finca 5-6 mi W of Barahona, Haiti. A — Holotype. B — Paratype. Phil. No. 460993.

DISTRIBUTION. Jamaica. About 15 spp. & forms.

*Ischnostrophina* Pilsbry, 1933  
Fig. 536

Pilsbry, 1933: 151 (*Brachypodella* subg.).

TYPE SPECIES — *Brachypodella (Ischnostrophina) latiaxis* Pilsbry, 1933; OD.

Shell shortly decollated, cylindrical with conic upper part, moderately thin, of 12-13 (after decollation; complete number — up to 16) flattened whorls. Last whorl with rounded basal keel. Color uniformly light corneous. Postapical sculpture of fine, regular riblets. Aperture free, moderately oblique, subquadrangular, with thin, reflexed margins. Columella considerably enlarged within last 4 whorls, with spiral lamella at lower part of each whorl. Last whorl with short palatal plica. Umbilicus absent. Height 12.5-16.0, diam. 3.0-3.3 mm (15.8 × 3.2 mm).

DISTRIBUTION. Haiti. 1 sp.

HOLOSPIRINAE Pilsbry, 1946

Pilsbry, 1946b: 111.

Shell entire or decollated, medium-sized to rather large, cylindrical to slenderly high-conic, in one genus discoidal. Aperture free. Columella enlarged, hollow, simple or with spiral lamella(e) or thickening(s), which sometimes furnished with radial riblets or protuberances. Parietal, basal or palatal lamellae may be present in various combinations.

Jaw delicate, vertically striated or nearly smooth.

Penis moderately long, internally with longitudinal folds, without stimulator. Epiphallus very long. Penial retractor present. Flagellum normally developed, sometimes very long. Spermathecal stalk with or without diverticle.

DISTRIBUTION. Guatemala, Mexico.

*Holospira* Martens, 1860

Martens in Albers, 1860: 39 (*Cylindrella* subg.; nom. nov. pro *Acera* Albers, 1850).

— *Acera* Albers, 1850: 209 (nom. praeocc., non

Cuvier, 1810; *Cylindrella* subg.; t.-sp. *Cylindrella pilocerei* L. Pfeiffer, 1841; SD Martens, 1860).

Thompson, 1998: 87.

TYPE SPECIES — *Cylindrella pilocerei* L. Pfeiffer, 1841; OD (see remark).

Shell not decollated, cylindrical with conic upper part, of 11-21 moderately convex whorls; last more or less projecting. Color corneous. Embryonic whorls smooth, later nearly smooth, striated or ribbed. Aperture relatively small, obliquely pyriform, rounded or ovate, margins expanded and reflexed, usually free throughout. Columella smooth or variously sculptured. Umbilicus small, narrow.

DISTRIBUTION. S Arizona and central Texas to S Mexico.

REMARK. Thompson (1998: 87) has proposed to replace the type species for *Cylindrella goldfussi* Menke, 1847, because "The holotype of the present type species, *C. pilocerei* Pfeiffer, 1841, no longer exists, and from its description that species could belong not only to *Holospira* (as at present used) but also to *Malinchea*, *Stalactella* or perhaps other genera". However, the procedure of replacement of a valid type species is not stipulated by the ICZN. Instead, a neotype of *C. pilocerei* should be designated according to Art. 75E.

*Holospira (Holospira s. str.)*  
Fig. 537

— *Bostrichocentrum* Strebel et Pfeffer in Strebel, 1880: 77, 80 (*Cylindrella* "Gruppe"; t.-sp. *Cylindrella tryoni* L. Pfeiffer, 1867; monotypy).

— *Haplostemma* Dall, 1895: 50 [*Holospira* subg.; t.-sp. *Holospira (Haplostemma) mearnsi* Dall, 1895 (= *Holospira (Distomospira) bilamellata* Dall, 1895); OD].

— *Eudistemma* Dall, 1895: 50 (*Holospira* sect.; t.-sp. *Holospira arizonensis* Stearns, 1890; OD).

— *Distomospira* Dall, 1895: 50 [*Holospira* subg.; t.-sp. *Holospira (Distomospira) bilamellata* Dall, 1895; OD].

— *Tristemma* Bartsch, 1906: 133 (nom. praeocc., non Brandt, 1835; t.-sp. *Holospira ferrissi* Pilsbry, 1905; OD).

— *Malinchea* Bartsch, 1945: 94 (nom. nov. pro *Tristemma* Bartsch, 1906).

— *Sonoraloa* Gilbertson, 1993: 72 (*Holospira* subg.; t.-sp. *Cylindrella remondi* Gabb, 1865; OD).

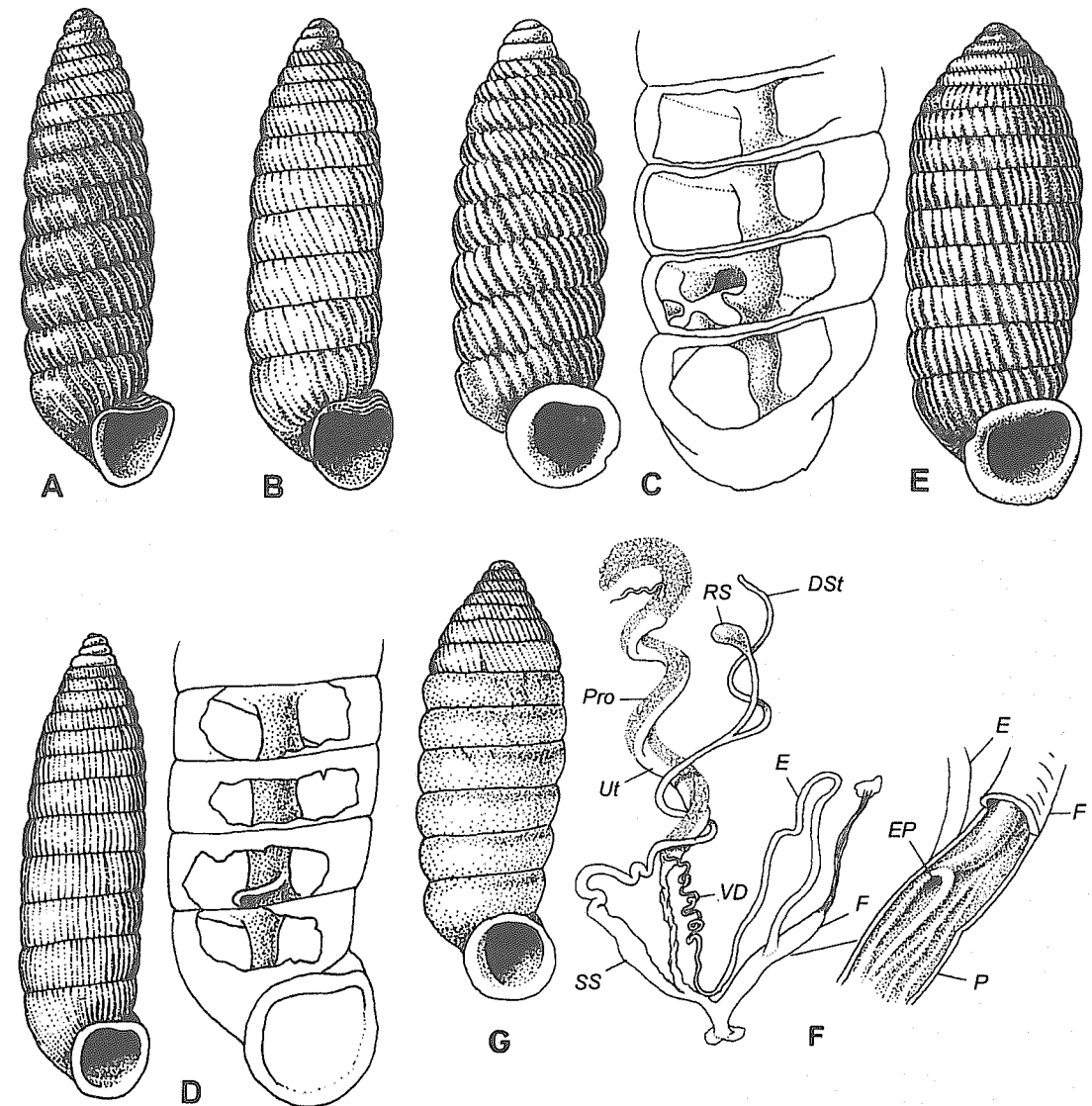


Fig. 537. A — *Holospira (Holospira) pilocerei* (L. Pfeiffer, 1841).

Shell: San Luis Potosi, Mexico. Chicago No. 41807.

B — ! *Holospira (Holospira) arizonensis* Stearns, 1890. Shell: Dos Cabezas Cave, Dos Cabezas Mts., Arizona. Topotypes. Chicago No. 60727.

C — ! *Holospira (Holospira) cyclostoma* Pilsbry, 1953. Shells: Canyon 12 mi of Arrayo, Gochico, Sonora, Mexico. Phil. No. 166411a (left, holotype) and 166411 (right, paratype).

D — ! *Holospira (Holospira) bilamellata* Dall, 1895. Shell: Daniels Mt., Hachita Grande Mts., New Mexico. Paris.

E — ! *Holospira (Holospira) tryoni* (L. Pfeiffer, 1867). Shell: Matamoros de Izucan, Puebla State, Mexico. Syntype. Paris.

F — ! *Holospira (Holospira) ferrissi* Pilsbry, 1905. Reproductive tract and interior of penis: Garden Canyon near Sierra Vista, Huachuca Mts., Arizona, April 17, 1993. Moscow No. Lc-23747.

G — *Holospira (Holospira) remondi laevior* Pilsbry, 1953. Sierra Batamoto, east-central Sonora near El Milagro Mine [Mexico]. StB No. 35520.



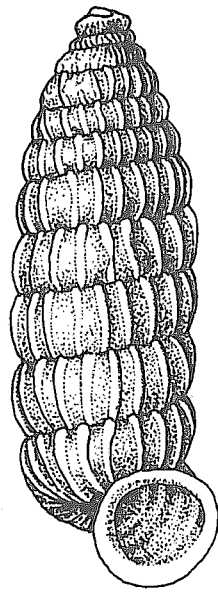


Fig. 538. *Holospira (Allocoryphe) minima* (Martens, 1898).  
S side of Rio Sonora, Hermosillo, Sonora, Mexico. Moscow No. Lc-23727 (Phil.).

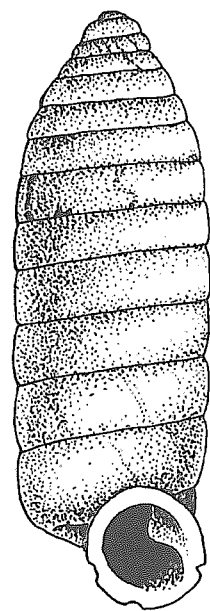


Fig. 539. *Holospira (Metastoma) roemeri* (L. Pfeiffer, 1848).  
El Paso, Texas. Vienna No. Ob-11990.

Shell cylindrical, more or less obese, with conic upper part, rather solid, of 11-17 slightly to moderately convex whorls. Last whorl without basal keel, slightly and gradually ascending in front. Color uniformly white to corneous. Embryonic whorls smooth, later with rather regular, rounded, more or less spaced ribs. Aperture subcircular to subtriangular, adnate, nearly vertical, with shortly reflexed and somewhat thickened margins. Columella with cord-like lamella which sometimes strongly expanded in penultimate whorl; besides, additional lamellae on basal, upper, or palatal wall of the same whorl may be present. Umbilicus dot-like. Height 9.0-20.5, diam. 3.0-6.5 mm (*pilocerei*: 12.1 × 4.4 mm; *arizonensis*: 12.9 × 4.3 mm; *cyclostoma*: 12.2 × 3.8 mm; *bilamellata*: 19.5 × 4.6 mm; *tryoni*: 12.1 × 4.4 mm; *remondi laevior*: 13.7 × 4.1 mm).

Talon, a simple curvature of hermaphroditic duct. Vas deferens thin, sinuous, entering long, slender epiphallus apically. Flagellum not long; penis of about same length, internally with weak, irregular, longitudinal folds and horse-shoe-like pilaster embracing epiphallic pore. Free oviduct slender, with very thin walls. Vagina very short. Spermathecal stalk long, somewhat enlarged near its base, with rather long diverticle. Reservoir rather small, ovate to subglobose.

DISTRIBUTION. Mexico, Texas, Arizona, New Mexico. Over 30 spp. with many subspp. or forms.

REMARK. I follow Pilsbry (1946b) in synonymizing a number of subgenera with *Holospira* s. str. and add *Bostrychocentrum* and *Sonoraloa*, as internal lamellae in *Holospira* may be different even in one population, for example, Pilsbry (1946b: 155) opened 26 shells of *H. ferrissi* Pilsbry, 1905 from Huachuca range at Manila mine and discovered that 20 of them had only columellar lamella, 4 — columellar and basal, and 2 — columellar, basal and parietal. I have got a similar result after inspection of 16 shells of the same species from Garden Canyon near Sierra Vista, Huachuca range: 2 shells had only columellar, 1 — columellar and parietal, 5 — columellar and basal, 8 — columellar, parietal and basal.

*Holospira (Allocoryphe) Pilsbry, 1946*  
Fig. 538

Pilsbry, 1946b: 123 (footnote).

TYPE SPECIES — *Holospira minima* Martens, 1898; OD.

Shell cylindrical, moderately solid, of about 12 whorls. Embryonic and 1-3 later whorls strongly angular at periphery, subsequent evenly rounded, slightly convex. Color light corneous, ribs lighter. Embryonic whorls smooth, postapical with irregular hollow ribs. Aperture subcircular, nearly vertical, with scarcely thickened, shortly reflexed margins. Columella moderately enlarged, without lamellae. Umbilicus open, very narrow. Height 8.4-14.0, diam. 3.0-4.2 mm (14.0 × 4.2 mm).

DISTRIBUTION. Mexico. 3 spp.

*Holospira (Metastoma)*  
Strebel et Pfeiffer, 1880  
Fig. 539

Strebel & Pfeiffer in Strebel, 1880: 80 (pro "Gruppe").

TYPE SPECIES — *Cylindrella roemeri* L. Pfeiffer, 1848; OD.

Shell cylindrical with conic upper part, moderately solid, of 11-14 nearly flat whorls. Color whitish to light-corneous. Embryonic whorls with microgranular sculpture, later with obsolete riblets or nearly glabrous. Aperture circular, with well expanded margins. Palatal wall with strong swelling at short distance from edge, and corresponding deep depression outside. Columella smooth, at 3rd whorl (from above) abruptly enlarged, then gradually diminishing downward. Umbilicus, a very narrow slit. Height 12-17, diam. 4.0-4.5 mm (13.2 × 4.3 mm).

DISTRIBUTION. SW Texas, S New Mexico. 1-3 spp.

*Holospira (Haplocion) Pilsbry, 1902*  
Fig. 540

Pilsbry, 1902 (1902-1903): 89.

— *Liostemma* Bartsch, 1906: 141 (*Holospira* subg.; t.-sp. *Holospira hamiltoni* Dall, 1897; OD).

TYPE SPECIES — *Holospira pasonis* Dall, 1895; OD.

Shell sometimes decollated, ovate-cylindrical, rather solid, of 11-19 (when entire) slightly convex whorls. Color light-corneous to white. Early postembryonic whorls finely

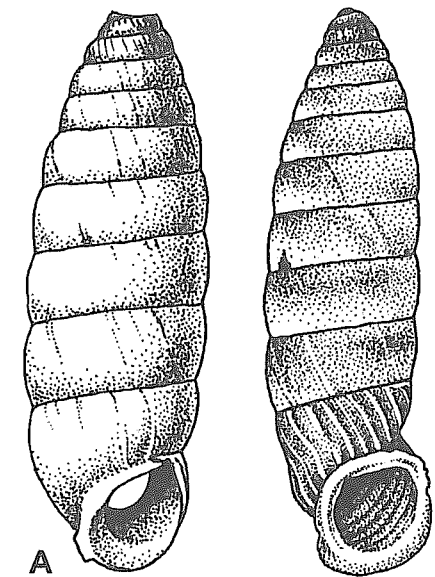


Fig. 540. A — *Holospira (Haplocion) pasonis* Dall, 1895.  
Mute Canyon, El Paso Co., Texas. Syntype. Phil. No. 63739.  
B — *Holospira (Haplocion) hamiltoni* (Dall, 1897). Rio Grande Mts., Brewster Co., Texas. Syntype. Phil. No. 298290.

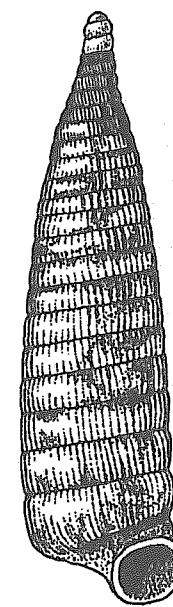


Fig. 541. *Apertaxis coahuilensis* (Bartsch, 1906).  
Sierra Guadalupe, Coahuila, Mexico. Holotype of *Coelostemma amplaxis* Pilsbry, 1953. Phil. No. 191189a.

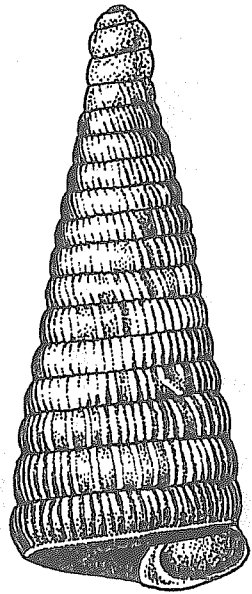


Fig. 542. *Gyrocion mirabilis* (Pilsbry, 1904). Diente, near Monterey, Nuevo Leon, Mexico. Holotype (immature shell). Phil. No. 85914a.

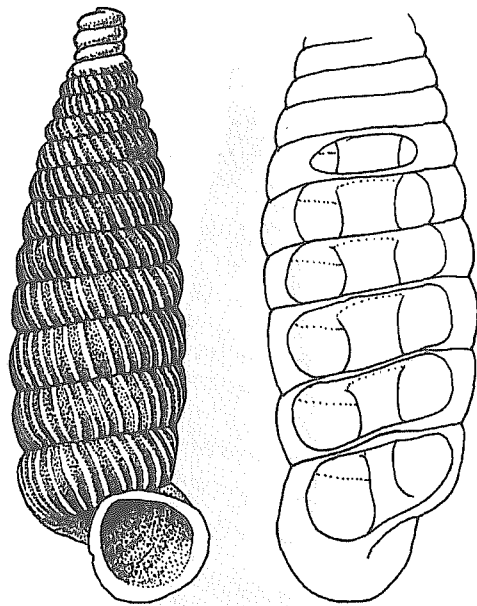


Fig. 543. *Goniapex pyrtonasta* (Thompson, 1988). WNW side of Bishops Cap Mt., Dona Ana Co., New Mexico. Paratype. Moscow No. Lc-23731 (Gain. No. UF 34483).

costulate, later with wrinkles gradually becoming obsolete, 2-3 last whorls may be nearly smooth. Aperture ovate, with a little reflexed margins. Columella comparatively slender, somewhat widening upward, plain throughout or having weak lamella in penultimate whorl. Umbilicus absent. Height 8-29, diam. 2.5-7.0 mm (*pasonis*: 16.2 × 4.0 mm; *hamiltoni*: 19.0 × 5.5 mm).

DISTRIBUTION. Mexico, Texas, New Mexico. 6 spp.

*Apertaxis* Pilsbry, 1953  
Fig. 541

Pilsbry, 1953: 159 (*Coelostemma* subg.).  
Thompson, 1971: 298.

TYPE SPECIES — *Coelostemma (Apertaxis) amplaxis* Pilsbry, 1953 (= *Epirobia coahuilensis* Bartsch, 1906); OD.

Shell turreted, with attenuated upper part, moderately solid, of about 23 narrow, flattened whorls. Color dark-brown. Embryonic whorls attenuate, finely-granular. Post-nuclear whorls with dense, regular riblets. Aperture small, subcircular, with simple margins. Columella broad, smooth, narrowing slightly in last whorl. Umbilicus circular, comparatively broad. Height 10.4-10.5, diam. 2.8-2.9 mm (10.4 × 2.8 mm).

DISTRIBUTION. Mexico: Sierra Guadalupe. 1 sp.

*Gyrocion* Pilsbry, 1904  
Fig. 542

Pilsbry, 1904b: 765 (*Epirobia* subg.).

TYPE SPECIES — *Epirobia (Gyrocion) mirabilis* Pilsbry, 1904; monotypy.

Shell slender, high-conic, rather thin, of about 17 narrow, convex whorls. Color corneous. Embryonic whorls smooth, later finely, irregularly ribbed. Characters of adult aperture unknown. Columella smooth; some whorls with spiral lamella inside on basal partition. Height 11, diam. 2.6 mm.

DISTRIBUTION. Mexico. 1 sp.

*Goniapex* Thompson, 1988  
Fig. 543

Thompson, 1988: 90 (*Coelostemma* subg.).

TYPE SPECIES — *Coelostemma pyrtonasta* Thompson, 1988; OD.

Shell elongated-elliptic to cylindrical-turrite, moderately solid, dull, of 15-22.5 convex whorls. Color corneous. Embryonic shell of 3-4 large protruding whorls; 2nd conspicuously larger than following two whorls and distinctly angular at periphery. Embryonic whorls superficially smooth, but at high magnification their sculpture consists of dense mesh of close, radial threads and granules on initial two whorls and weak riblets on 3rd whorl. Postembryonic whorls with hollow radial ribs and incomplete, irregular radial threads between ribs. Aperture circular, with broadly expanded, flat margins. Columella large, smooth. Umbilicus, a very narrow and deep slit. Height 14.5-24.0, diam. 4.1-7.2 mm (16.8 × 4.7 mm).

DISTRIBUTION. Chihuahua Desert of N Mexico and SW of the U.S.A. 6 spp.

*Coelostemma* Dall, 1895  
Fig. 544

Dall, 1895: 50.

— *Megaxis* Pilsbry, 1946b: 123 (*Holospira* subg.; t.-sp. *Holospira fusca* Martens, 1897; OD).

TYPE SPECIES — *Holospira elizabethae* Pilsbry, 1889; OD.

Shell cylindrical to somewhat clavate, with conic upper part, moderately solid, of 14-21 flattened whorls. Colour grey or light corneous. Embryonic whorls smooth, conic part finely regularly ribbed, on cylindrical part ribs become weaker, 2-3 last whorls ribbed again. Aperture small, rounded or slightly triangular, with reflexed margins. Columella rather wide, with radial riblets. Umbilicus practically absent. Height 14-21, diam. 4.7-5.7 mm (20.7 × 5.7 mm).

DISTRIBUTION. Mexico. 12 spp.

*Coelocentrum* Crosse et Fischer, 1872

Crosse & Fischer, 1872: 302. Thompson & Correa, 1994: 144.

TYPE SPECIES — *Cylindrella turris* L. Pfeiffer, 1856; OD.

Shell decollated, turreted to obesely fusi-form, moderately solid, of 12-15 (after decollation) slightly convex whorls. Last

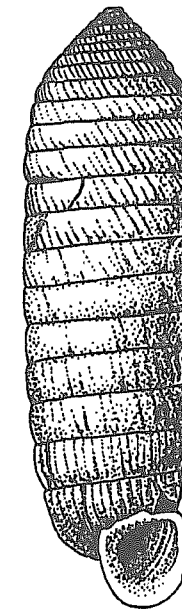


Fig. 544. *Coelostemma elizabethae* (Pilsbry, 1889). Ainula, village in State of Guerrero, Mexico. Lectotype. Phil. No. 25049a.

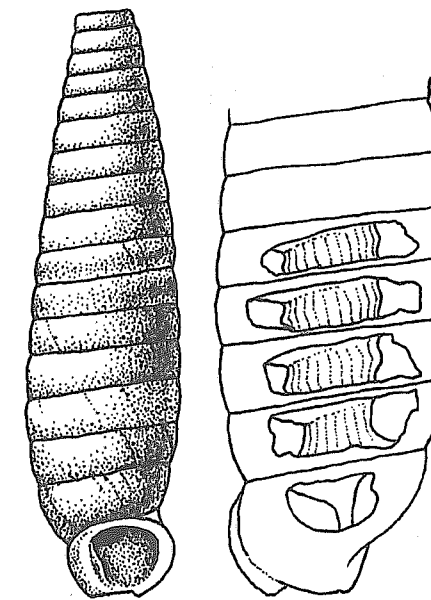


Fig. 545. *Coelocentrum (Coelocentrum) turris* (L. Pfeiffer, 1856). Mexico. Phil. No. 25072.

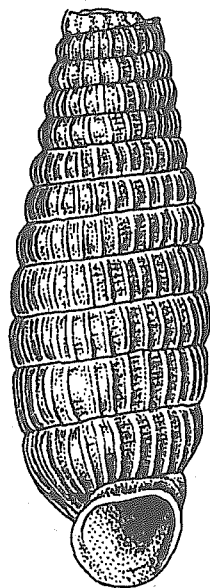


Fig. 546. *Coelocentrum (Gymnocentrum) filicosta* (Shuttleworth, 1852). Mexico. Phil. No. 3939.

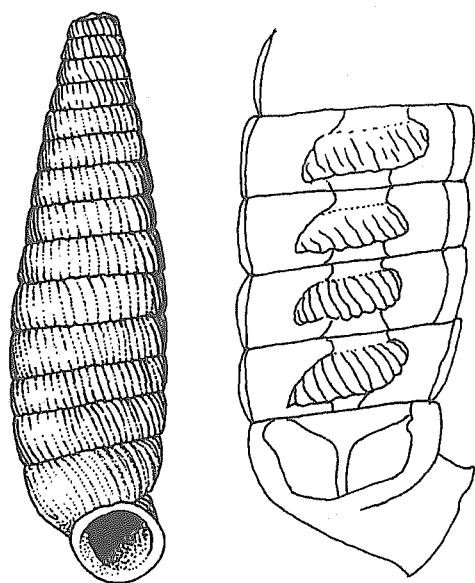


Fig. 547. *Coelocentrum (Crossostephanus) palmeri* (Dall et Bartsch, 1908). Tamaulipas, Mexico. Paralectotypes. Chicago No. 62392.

whorl with very light basal keel. Color generally corneous. Postnuclear whorls with weak, irregular, radial wrinkles. Aperture subcircular, free, well oblique, with more or less reflexed and expanded margins. Columella enlarged, with wide, rounded radial folds and broad and very low spiral thickening which begins in 2nd-3rd whorl from below. Aperture solute, relatively small, subcircular to rounded-triangular. Umbilicus, a blind slit to comparatively broad perforation.

DISTRIBUTION. Mexico, Guatemala, Belize.

*Coelocentrum (Coelocentrum s. str.)*  
Fig. 545

Columella with oblique radial riblets separated from bottom septum to form narrow spiral channel. Riblets bear several small pointed knobs which may combine to form short combs. Height 20-80, diam. 5-17 mm (55.0 × 14.2 mm).

DISTRIBUTION. Mexico, Guatemala, Belize. About 20 spp.

*Coelocentrum (Gymnocentrum)*  
Pilsbry, 1942)  
Fig. 546

Pilsbry, 1942: 105 (nom. nov. pro *Liocentrum* Pilsbry, 1902).

— *Liocentrum* Pilsbry, 1902 (1902-1903): 46 [nom. praeocc., non Karsch, 1890 (Insecta); *Coelocentrum* sect.; t.-sp. *Cylindrella filicosta* Shuttleworth, 1852; OD].

TYPE SPECIES — *Cylindrella filicosta* Shuttleworth, 1852; OD.

Shell fusiform-cylindrical, rather solid, of 10.5-14 (after decollation) moderately convex whorls. Last whorls without basal keel. Color corneous, light yellowish-brown or greenish. Postapical sculpture of thin, variously spaced, radial ribs and rather coarse, irregular, spiral striation between ribs. Aperture rounded, flattened above, with slightly reflexed margins. Columella nearly smooth, either cylindrical or swollen within each whorl. Umbilicus very narrow. Height 23-54, diam. 7.5-16.5 mm (23.8 × 7.8 mm).

DISTRIBUTION. Guatemala, Mexico. 4 spp.

*Coelocentrum (Crossostephanus)*  
Dall, 1908)  
Fig. 547

Dall, 1908: 177 (pro sect.). Thompson & Correa, 1994: 153.

TYPE SPECIES — *Coelocentrum (Crossostephanus) palmeri* Dall et Bartsch, 1908; OD.

Shell fusiform-cylindrical, of about 15 (after decollation) slightly convex whorls. Color brown. Postembryonic sculpture of fine ribs. Columella with not solid lamella representing evagination of columellar wall; lamella greatly extended as pendulant fold, and knobs consist of large forward-directed overlapping leaves or plates. In some species lamella low, with a few coarse nodes. Height 21.8-63.7, diam. 5.3-17.0 mm (47.4 × 13.4 mm).

DISTRIBUTION. Mexico: SE Tamaulipas and adjacent San Luis Potosi. At least 6 spp.

*Crycoryne* Thompson, 1971  
Fig. 548

Thompson, 1971: 289 (*Coelostemma* subg.).

TYPE SPECIES — *Coelostemma astraxis* Thompson, 1971; OD.

Shell rather solid, opaque, of 19-22 whorls; earlier convex, lower flattened. Basal keel absent. Color faint pinkish-white. Embryonic whorls smooth, later with oblique low riblets becoming obsolete at about 10th whorl; cylindrical portion of shell nearly smooth, with irregular, fine, radial striation. Aperture somewhat squarish, with expanded, trumpet-shaped margins. Columella with about 5-6 large, obliquely-compressed, bluntly-pointed, spirally arranged nodes per whorl. Umbilicus narrowly perforate. Height 20.2-26.0, diam. 6.7-8.0 mm (22.2 × 6.8 mm).

DISTRIBUTION. W Mexico (Coahuila, Durango). 1 sp.

*Elasmocentrum* Pilsbry, 1902  
Fig. 549

Pilsbry, 1902 (1902-1903): 50 (*Coelocentrum* subg.).

TYPE SPECIES — *Coelocentrum exlex* Pilsbry, 1902; monotypy.

Shell decollated, cylindrical-fusiform,

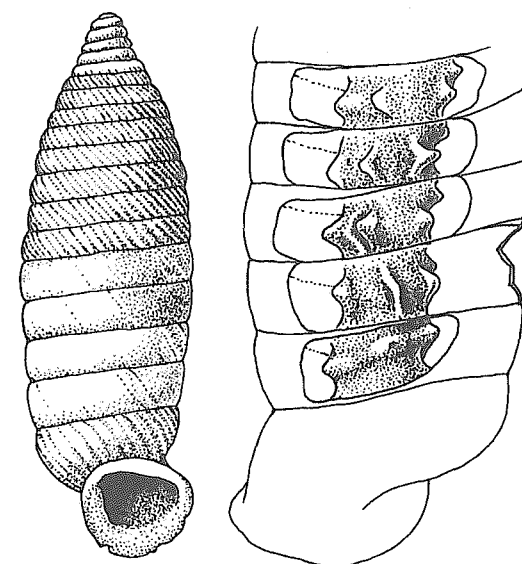


Fig. 548. *Crycoryne astraxis* (Thompson, 1971). 9.0 mi. SSW of Picardias, Mexico. Paratype. Moscow No. Lc-23729 (Gain. No. UF 20902).

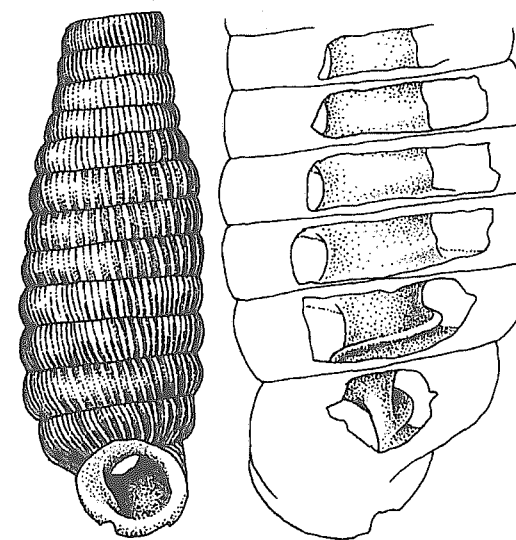


Fig. 549. *Elasmocentrum exlex* (Pilsbry, 1902). Mexico. Holotype. Phil. No. 3938.

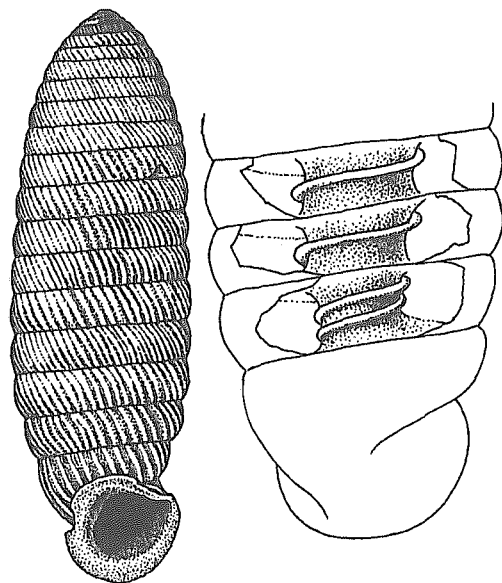


Fig. 550. *Styloptyx fornax* (Thompson, 1971). Limestone hillside, 2.2 mi. S of Presa Francisco Zarca, Durango, Mexico. Paratype. Moscow No. Lc-23730 (Gain. No. UF 20898).

rather thin, dull, its upper third tapering, of 12.25 whorls (after decollation). Last whorl distinctly contracted below penultimate, with low basal cord. Color whitish flesh-tinted, ribs whitish; aperture brownish inside. Postembryonic sculpture of irregular, arcuate riblets. Aperture nearly circular, oblique, with expanded, narrowly reflexed margins. Columella large, hollow, smooth, in last two whorls with rounded lamella. Umbilicus, a deep rim. Height 23.2, diam. 7.6 mm. DISTRIBUTION. Mexico. 1 sp.

*Styloptyx* Thompson, 1971  
Fig. 550

Thompson, 1971: 293 (*Coelostemma* subg.).

TYPE SPECIES — *Coelostemma fornax* Thompson, 1971; OD.

Shell cylindrical to somewhat clavate, rather solid, opaque, of about 20 slightly convex narrow whorls. Color light, ribs white. Embryonic whorls smooth; 2nd whorl partially and obliquely submerged beneath adjacent whorl. Postapical whorls with oblique radial ribs. Aperture subcircu-

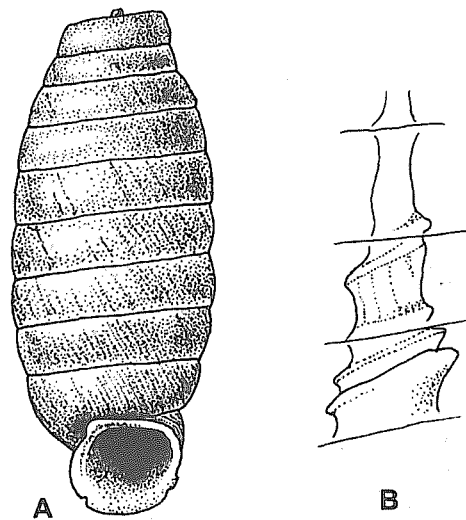


Fig. 551. *Schizopyle bourgeoisae* Pilsbry, 1939. A — shell: Zihuatanejo, Guerrero, Mexico. Holotype. Phil. No. 174058. B — structure of columella. After Pilsbry, 1939a.

lar, with moderately reflexed margins. Columella with 2 lamellae; one of them large and occupies about lower 5 whorls, lying upon center of axis; 2nd lamella reduced in size, confined to last whorl, between 1st lamella and floor of whorl. Umbilicus narrow. Height 17.6-26.0, diam. 5.4-7.1 mm (21.1 × 6.4 mm).

DISTRIBUTION. W Mexico (Coahuila, Durango). 1 sp. with 2 subsp.

*Schizopyle* Pilsbry, 1939  
Fig. 551

Pilsbry, 1939a: 27 (*Coelocentrum* subg.).

TYPE SPECIES — *Coelocentrum bourgeoisae* Pilsbry, 1939; OD.

Shell decollated, obesely-fusiform, rather solid, of 9.5-10 (after decollation) flattened whorls; last whorl rounded, with only weak trace of spiral cord and slight impression defining the base. Color uniformly light-corneous. Postapical whorls with very fine thread-like striae about as wide as their intervals. Aperture rounded, quite oblique, free, with thickened, scarcely

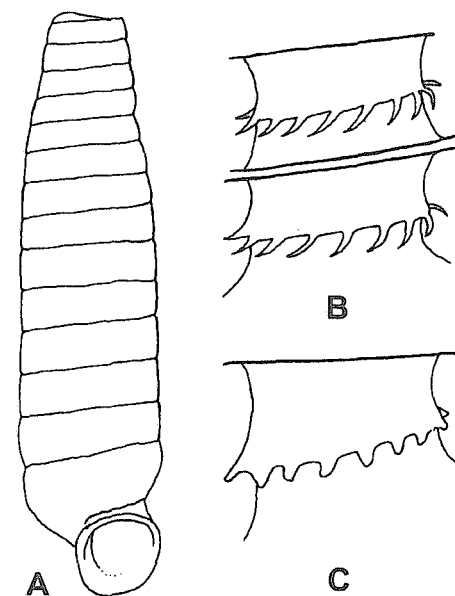


Fig. 552. *Ptychodonta astrophorea* (Dall, 1897). A — shell. After Zilch, 1960. B — columella in 3rd and 4th to last whorl. C — columella in penultimate whorl. After Bartsch, 1906.

reflexed margins. Columella rather narrow above but enlarged in last 4 whorls; this swelling becoming rather thick, rounded spiral cord in penultimate whorl, where there is also high spiral lamella flaring into whorl cavity from junction of columella and lower partition; much shorter spiral cord situated on upper partition, and weaker one in palatal wall, opposite to higher part of this lamella. These lamellae diminish rapidly in last whorl, and not visible through aperture. Umbilicus absent. Height 21.3-22.8, diam. 7.6-8.3 mm (21.3 × 7.6 mm).

DISTRIBUTION. Mexico. 1 sp.

*Ptychodonta* Bartsch, 1906  
Fig. 552

Bartsch, 1906: 118. Thompson & Correa, 1994: 147.

TYPE SPECIES — *Coelocentrum astrophorea* Dall, 1897; OD.

Shell decollated, subcylindrical, rather solid, of 13-15 (after decollation) much flattened whorls. Color brown. Embryonic whorls with numerous, close thread-riblets.

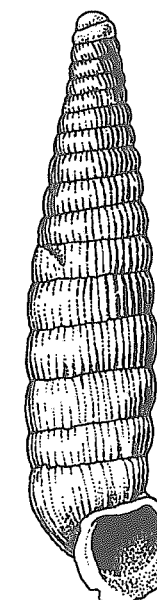


Fig. 553. *Prionolopax odontoplax* (Pilsbry, 1953). San Lorenzo, SE Mexico. Paratype. Phil. No. 164590.

Postnuclear sculpture of thin, rather regular ribs. Aperture relatively small, rounded, free, with somewhat thickened, reflexed margins. Columella with sharp, turgid, spiral lamella, being hollow evagination of columellar wall. Lamella bears row of radial spines. Height 26.8-29.8, diam. 7.3-7.7 mm.

DISTRIBUTION. Mexico. 4 spp.

*Prionolopax* Pilsbry, 1953  
Fig. 553

Pilsbry, 1953: 140 (*Holospira* subg.).

TYPE SPECIES — *Holospira (Prionolopax) odontoplax* Pilsbry, 1953; OD.

Shell slender, turreted, moderately solid, of 16-17 moderately convex whorls. Last whorl without basal keel. Color light-corneous. Embryonic whorls smooth. Postnuclear sculpture of fine, regular, white ribs. Aperture rounded, adnate, with flattened upper wall. Parietal lamella serrated, entering for 3 whorls. Basal plica present in 3rd whorl from below, opposite to it columellar lamella forms thickening. Umbilical depression pre-



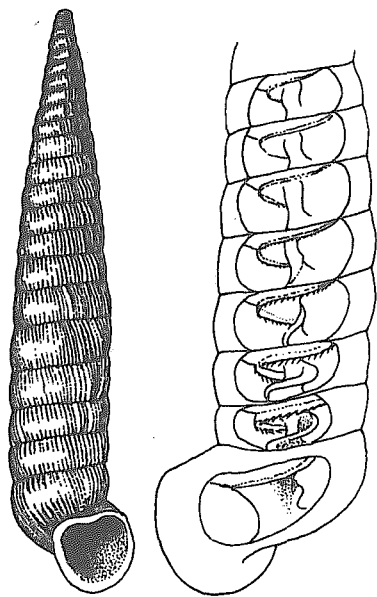


Fig. 554. *Propilsbrya (Propilsbrya) nelsoni* (Bartsch, 1906).  
Sierra Guadalupe, Coahuila, Mexico. Moscow No. Lc-23336 (Phil. No. 164212).

sent, but umbilicus wanting. Height 8.5-11.5, diam. 2.0-2.3 mm (11.2 × 2.3 mm).  
DISTRIBUTION. Mexico. 1 sp.

*Propilsbrya* Bartsch, 1906

Bartsch, 1906: 121 (*Epirobia* subg.).  
— *Stalactella* Bartsch, 1906: 151 [*Holospira* subg.; t.-sp. *Holospira (Stalactella) rosei* Bartsch, 1906; OD].  
Rehder, 1940: 315.

TYPE SPECIES — *Epirobia (Propilsbrya) nelsoni* Bartsch, 1906; OD.

Shell sometimes decollated, slender, of many narrow whorls. Last whorl without basal keel. Postapical sculpture of thin, crowded ribs. Columella comparatively narrow to rather broad, hollow; columellar lamella thin, smooth or minutely dentate, parietal lamella spinose. Umbilicus closed or dot-like.

DISTRIBUTION. Mexico.

*Propilsbrya (Propilsbrya s.str.)*  
Fig. 554

Shell sometimes decollated, very slender, turrated, shining, of 22-24 slightly convex whorls. Color brown or reddish-brown. Embryonic whorls smooth, subsequent with fine, crowded, regular riblets. Aperture irregularly rounded, flattened at upper side, free, a little solute, with shortly reflexed margins. Columellar lamella smooth, not dentate, extending for about 3 last whorls. Besides, there is thin parietal lamella; its edge in last whorl smooth, in penultimate — denticulated, denticles becoming sharper upward and turning into minute spines. This lamella smooth in 6th-7th whorls (from below). Umbilicus closed. Height 12-18, diam. 2.5-3.6 mm (17.7 × 3.2 mm).

DISTRIBUTION. Mexico. 2 sp.

*Propilsbrya (Pectinistemma)*  
Rehder, 1940)  
Fig. 555

Rehder, 1940: 315.

TYPE SPECIES — *Propilsbrya (Pectinistemma) koestneri* Rehder, 1940; OD.

Shell mostly decollated, slender, sub-

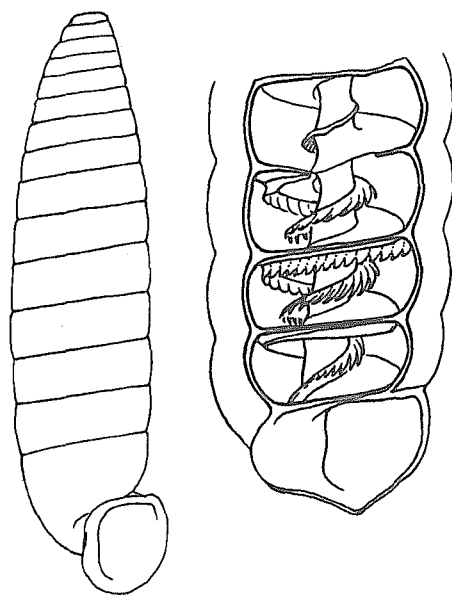


Fig. 555. *Propilsbrya (Pectinistemma) koestneri* Rehder, 1940.  
After Rehder, 1940.

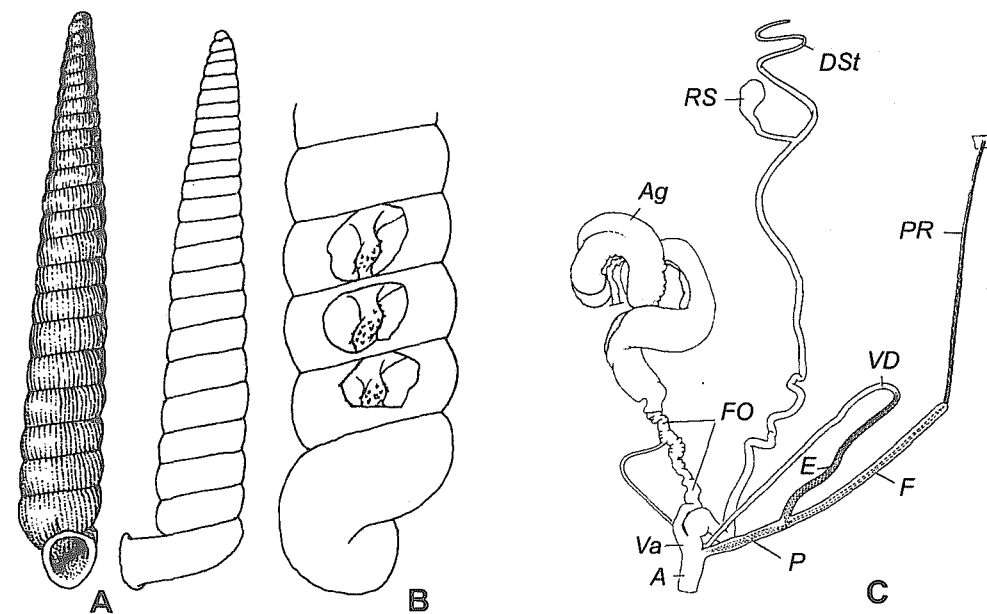


Fig. 556. A, B — *Epirobia polygyra* (L. Pfeiffer, 1856).  
A — shell: Cordoba, Mexico. Syntype. Paris. B — structure of columella: Mexico. Vienna.  
C — ! *Epirobia lurida* Thompson, 1976. Reproductive tract. After Thompson, 1976.

cylindrical, of about 20 flattened whorls. Color vinaceous-brown to bluish-gray. Embryonic whorls smooth, later finely, rather closely ribbed. Aperture rounded, entire, margins slightly reflexed. Columella somewhat expanded. Columellar lamella thin, originating as a cord and gradually becoming broader, furnished in 3rd and 4th whorls from below with rather long, crowded denticles. Parietal lamella originating in 5th whorl from below, in next 2 whorls scalloped, or bearing crowded, short, flattened, forward-curving denticles. Umbilicus dot-like. Height 17.4 mm, diam. 5.0 mm.

DISTRIBUTION. Mexico. 1 sp.

*Epirobia* Strebel et Pfeffer, 1880  
Fig. 556

Strebel & Pfeffer in Strebel, 1880: 77, 85.  
Thompson, 1976: 41.

TYPE SPECIES — *Cylindrella polygyra* L. Pfeiffer, 1856; SD Pilsbry & Vanatta, 1898.

Shell very slender, attenuated above, thin, whorls up to 25. Last whorl without

basal cord. Apex obtuse. Color brown or corneous, sometimes with white streaks. Embryonic and few later whorls smooth, postembryonic whorls radially striated or finely ribbed. Aperture shortly free, subcircular, vertical, with a little reflexed margins; upper margin often straight. Columella rather slender but hollow, with radial white streaks or irregular lamellae, or granules formed by their dislocation and interruption. Umbilicus minutely open. Height 12-19, diam. 1.7-2.6 mm (17.2 × 2.4 mm).

Jaw solid, arcuate.

Talon and carrefour absent. Vas deferens relatively stocky above penis and weakly enlarged as epiphallus for distance about equal to length of penis. Flagellum long, slender, compressed. Penis long, slender, internally with 4 longitudinal fleshy folds; verge absent. Penial retractor originates on diaphragm and inserts on flagellum apically. Atrium comparatively long. Vagina short. Spermathecal stalk very long, its base enlarged to thick-walled muscular bulb. Diverticle of spermathecal stalk well developed.

DISTRIBUTION. E Mexico, N Guatemala. 9 spp. & subspp.

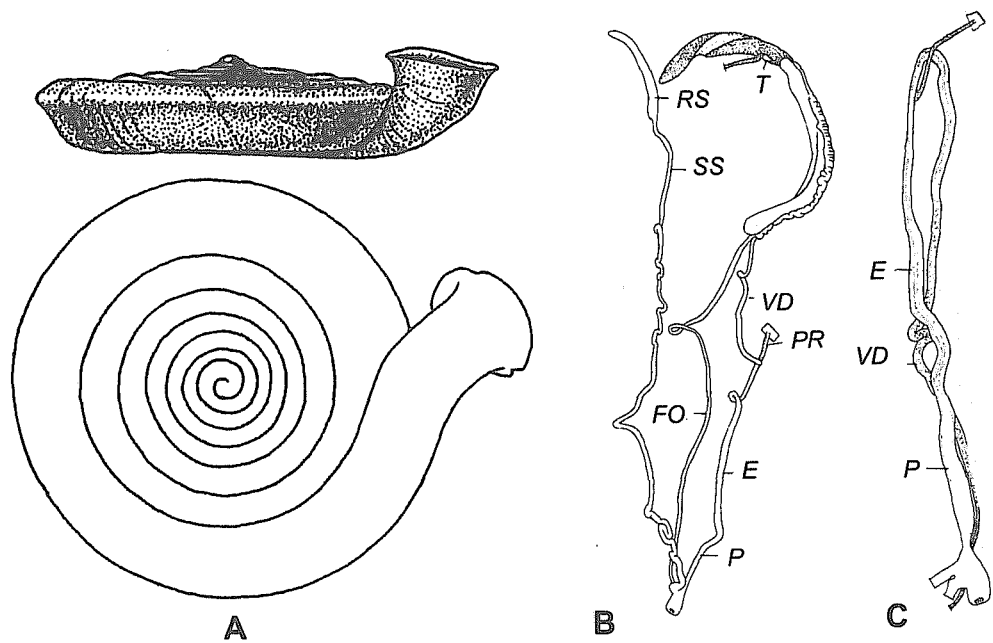


Fig. 557. A — *Hendersoniella palmeri* (Dall, 1905). Shell: Alvarez, San Luis Potosi, Mexico. Chicago No. 62391. B, C — ! *Hendersoniella lux* Thompson et Correa, 1991. B — reproductive tract. C — distal male ducts. After Thompson & Correa, 1991.

*Hendersoniella* Dall, 1905  
Fig. 557

Dall, 1905b: 189 (nom. nov. pro *Hendersonia* Dall, 1905).

— *Hendersonia* Dall, 1905a: 187 [nom. praeocc., non A. Wagner, 1905; (Prosobranchia); t.-sp. *Hendersonia palmeri* Dall, 1905; monotypy].

Thompson & Correa, 1991: 4.

TYPE SPECIES — *Hendersonia palmeri* Dall, 1905; monotypy.

Shell discoidal, thin, with scarcely elevated apex, of 8-9 rather convex whorls. Last whorl with peripheral cord-like keel, free from penultimate whorl and recurved upward. Color corneous. Embryonic whorls smooth, later finely radially striated. Aperture ovate to subcircular, oblique, with parietal lamella entering for about 0.25 whorl. Umbilicus extraordinary broad. Height 2.0-2.5, diam. 11-13 mm (2.1 × 12.4 mm).

Jaw solid, arcuate, with wide medium projection; surface with very fine diverging striae.

Kidney comparatively long (about 1/7 of lung length), sigmoid. Primary ureter recur-

ved around anterior end of kidney and closed only in beginning; rest portion open, as well as secondary ureter.

Talon exposed, small, ovate. Vas deferens short, not adherent, demarcated from epiphallus internally by lining of papillae. Flagellum absent. Epiphallus long, narrow, internally with 4-6 longitudinal folds; demarcated from penis by slight internal constriction. Penis long, slender, without sheath, internally nearly smooth. Penial retractor inserted onto middle of epiphallus. Free oviduct thin-walled, exceptionally long and slender. Vagina practically absent, since spermathecal stalk branches off from genital atrium at junction with free oviduct. Spermathecal stalk very long, slender, without diverticle; reservoir slightly enlarged in diameter, elongated-club-shaped.

DISTRIBUTION. Mexico. 3 spp., one of them with 2 subsp.

BRACHYPODELLINAE Baker, 1956

Baker, 1956: 130. Jaume & Torre, 1976: 34 (as new subfam.).

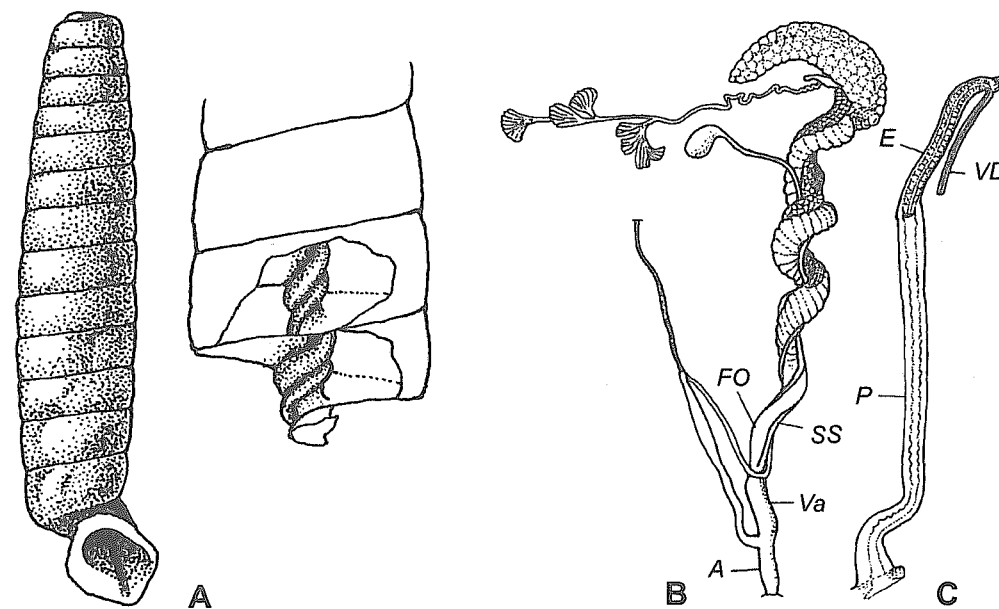


Fig. 558. A — *Brachypodella antiperversa* (Férussac, 1821). Jamaica. Shell and structure of columella. Paris. B, C — ! *Brachypodella leucopleura* (Menke, 1827). B — reproductive tract. C — interior of penis. After Baker, 1927.

Shell usually decollated, cylindrical, slender. Aperture free. Columella solid, with 1 or 2 equal, rounded, even lamellae. Parietal, basal or palatal lamellae absent.

Jaw delicate, arched, with numerous plaits.

Penis long, slender, internally nearly smooth, without conspicuous structures. Epiphallus present. Penial retractor present. Flagellum absent. Spermathecal stalk lacking diverticle.

DISTRIBUTION. Northern S America, Central America northward to S Mexico, Antilles from Trinidad to Haiti.

REMARK. Jaume & Torre (1972, 1976) recognized this subfamily on the basis of diagnostic radular characters ("Rachidian tooth hoe shaped" while in Tetrentodoninae "Rachidian tooth pointedly cusped") and attributed to this subfamily 3 Cuban taxa as subgenera of *Brachypodella*: *Brevipedella* Pilsbry, 1903, *Gyraxis* Pilsbry, 1903 and *Syphonolaemus* Pilsbry, 1903. However, I do not think that these characters are sufficient for separation of a subfamily (see p. 3 of this book); at the same time, mentioned taxa are quite similar to some Cuban

Tetrentodoninae. Therefore, I provisionally retain only one genus in Brachypodellinae.

*Brachypodella* Beck, 1837  
Fig. 558

Beck, 1837: 89.

— *Cylindrella* L. Pfeiffer, 1840: 38, part.

— *Brachypus* Guilding, 1828: 167 [nom. praeocc., non Swainson, 1824 (Aves); t.-sp. *Brachypus costatus* Guilding, 1828; monotypy].

— *Siphonostoma* Swainson, 1840: 168, 333 [nom. praeocc., non Voigt, 1836 (Vermes); t.-sp. *Brachypus costatus* Guilding, 1828; designated here].

— *Brachypodisca* Agassiz, 1846: 51 (nom. emend. pro *Brachypodella*).

TYPE SPECIES — *Helix* (*Cochlodina*) *antiperversa* Férussac, 1821; SD Pilsbry & Vanatta, 1898.

Shell mostly decollated, cylindrical, fusiform or tapering-turritid, rather solid, of 13-15 (after decollation) strongly flattened whorls. Last whorl with sharp basal keel. Color light-corneous. Postembryonic whorls silky radially striated to ribbed. Aperture

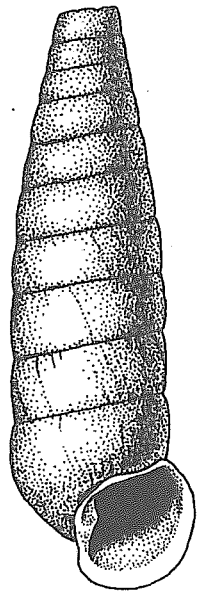


Fig. 559. *Eucalodium (Eucalodium) decollatum* (Nyst, 1841). Mexico. Leiden.

free or adnate, irregularly rounded or squarish, with reflexed margins. Height 5.7-18.0, diam. 1.7-4.0 mm (12.2 × 2.6 mm).

Jaw thin, arcuate and plaited.

Talon exposed, finger-shaped. Vas deferens moderately long, entering epiphallus subapically. Epiphallus externally not demarcated from penis, rather short, tubular, with very narrow lumen, entering penis through pore at tip of tiny verge. Penis rather long, subcylindrical, internally without conspicuous characters. Free oviduct and vagina of about equal length. Spermathecal stalk very narrow, long, reservoir rather small, ovate.

DISTRIBUTION. As of subfamily. About 40 spp.

#### EUCALODINAE Fischer et Crosse, 1873

Fischer & Crosse, 1873: 318 (Helicidae subf.).

Shell decollated, large to very large, turritid. Aperture free, adnate. Columella solid, slender. Columellar lamella absent or one simple lamella present. Parietal, basal or palatal lamellae absent.

Jaw arcuate, solid, smooth, finely striated.

Penis short, internally with longitudinal folds or tubercles arranged in diagonal rows. Epiphallus very long. Penial retractor present. Flagellum wanting. Spermathecal stalk generally lacking diverticle (in 1 species of *Anisospira* diverticle present).

DISTRIBUTION. Mexico, Guatemala.

#### *Eucalodium* Crosse et Fischer, 1868

Crosse & Fischer, 1868: 88.

— *Thaumasia* Albers, 1850: 207 [nom. praeocc., non Perty, 1830 (Arachnida); *Cylindrella* subg., part.; t.-sp. *Pupa decollata* Nyst, 1841; designated here].

TYPE SPECIES — *Cylindrella ghiesbreghtii* L. Pfeiffer, 1856 (= *Pupa decollata* Nyst, 1841); OD

Shell cylindrical to cylindrical-tapering, quite solid to rather thin, of 7-14 (after decollation) flattened whorls. Last whorl without basal keel. Color brown. Postembryonic whorls rib-striated or costulate. Aperture ovate, more or less angular above, shortly free in front, margins thickened and narrowly reflexed. Columella narrow, solid or perforated by mere chink, simple or with 1 lamella inside penultimate whorl. Umbilicus closed.

DISTRIBUTION. Mexico, Guatemala.

#### *Eucalodium (Eucalodium s. str.)*

Fig. 559

Shell subcylindrical to turritid, quite solid, heavy, of 7-14 (after decollation) slightly convex whorls. Color corneous or dark-brown. Postembryonic sculpture of weak radial wrinkles or riblets. Aperture with scarcely reflexed, somewhat thickened margins. Columella with strong, compressed, spiral lamella, median in each whorl; its lower end visible through aperture. Height 32-82, diam. 18-24 mm (71.0 × 22.2 mm).

DISTRIBUTION. Mexico, Guatemala. 3-4 spp.

#### *Eucalodium (Oligostylus)*

Pilsbry, 1895)

Fig. 560

Pilsbry in Dall, 1895: 51.

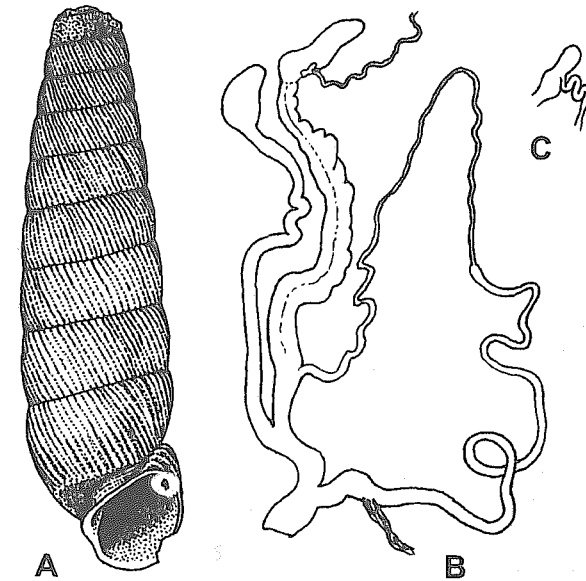


Fig. 560. *Eucalodium (Oligostylus) blandianum* Crosse et Fischer, 1868.

A — shell: no data ("coll. Schueltz"). Leiden. B — reproductive tract (albumen gland omitted). C — talon enlarged. After Strebel & Pfeffer in Strebel, 1880.

TYPE SPECIES — *Eucalodium blandianum* Crosse et Fischer, 1868; OD.

Shell pillar-shaped, solid, of 8-10 (after decollation) slightly convex whorls. Color olive-yellow to brown. Postapical whorls with rather fine, crowded radial ribs. Aperture irregularly ovate, with straight, oblique parietal wall. Margins scarcely thickened, shortly or not reflexed. Columella slender, either straight or slightly sigmoid within each whorl. Umbilicus closed, but umbilical slit-like depression present. Height 25-80, diam. 7-22 mm (68.1 × 19.0 mm).

Talon exposed, small. Vas deferens long, convoluted, entering epiphallus terminally. Epiphallus very long, slender. Penis small, its boundary with epiphallus marked with insertion of penial retractor; latter arises on diaphragm. Free oviduct and vagina not long, subequal. Spermathecal stalk long, cylindrical, ovate reservoir reaching albumen gland.

DISTRIBUTION. Mexico. 12-13 spp. with many forms.

#### *Eucalodium (Resupinata)*

Martens, 1897)

Fig. 561

Martens, 1897: 255 (pro "group").

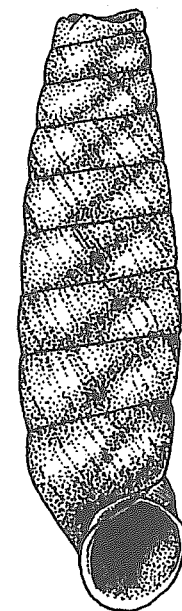


Fig. 561. *Eucalodium (Resupinata) speciosum* (Dunker, 1844). Cordoba, Mexico. Leiden.

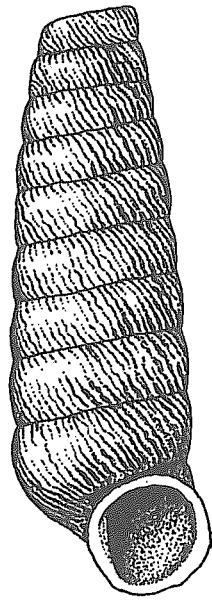


Fig. 562. *Ptychocentrum marianum* (Bartsch, 1943). Tecpatan, Chiapas, Mexico. Syntype. Phil. No. 194670.

TYPE SPECIES — *Cylindrella speciosa* Dunker, 1844; SD Pilsbry, 1903 (1902-1903).

Shell cylindrical or subfusiform, rather thin, of about 10 (after decollation) slightly convex to flattened whorls. Color corneous. Postembryonic sculpture of more or less spaced, fine, irregular wrinkles. Aperture irregularly rounded, with scarcely thickened margins. Columella solid, lacking lamellae. Height 32-56, diam. 8-13 mm (45.0 × 11.5 mm).

DISTRIBUTION. Mexico. 8 spp. & forms.

*Ptychocentrum* Bartsch, 1943  
Fig. 562

Bartsch, 1943b: 91 (*Coelocentrum* subg.).

TYPE SPECIES — *Coelocentrum* (*Ptychocentrum*) *bourgeoisae* Bartsch, 1943 (non Pilsbry, 1939 = *marianum* Bartsch, 1943); OD.

Shell subcylindrical, solid, of 9-10 (after decollation) slightly convex whorls. Last whorl without basal keel. Color brown. Postembryonic sculpture of fine, crowded, wavy, radial wrinkles. Aperture round,

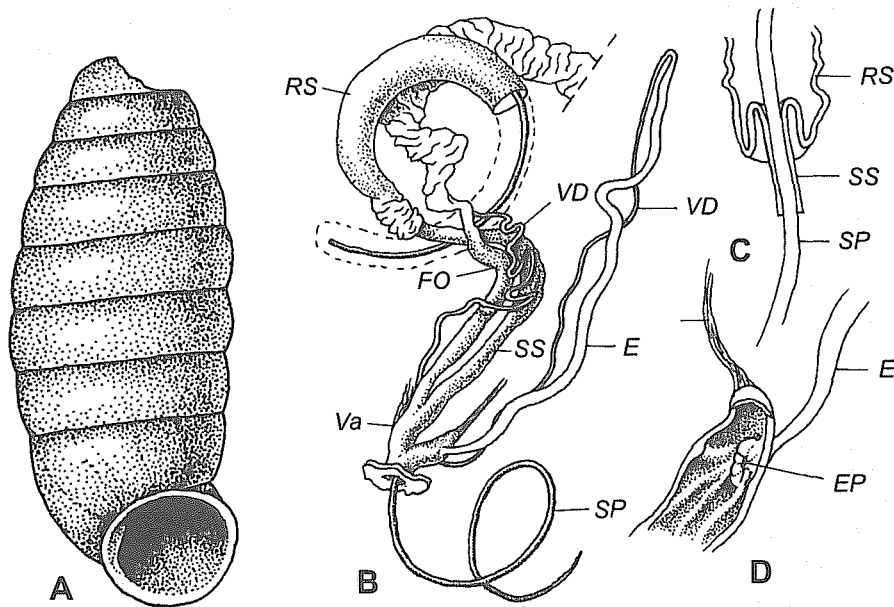


Fig. 563. A — *Anisospira* (*Anisospira*) *liebmanni* (L. Pfeiffer, 1846). Shell: Mexico. Leiden.  
B, C, D — ! *Anisospira* (*Anisospira*) *velascorum* Breure, 1977: road Pochutla — Puerto Escondido (ca. 10 km E Puerto Escondido), State of Oaxaca, Mexico, July 14, 1974. Paratype. Leiden No. 9026. B — reproductive tract. C — spermatophore inside spermathecal shaft and reservoir. D — interior of penis.

oblique, with thickened margins. Columella moderately wide, hollow, moderately expanding, with cord-like lamella disappearing in penultimate whorl. Height 51-55, diam. 16.5-17.0 mm (51.0 × 16.5 mm).

DISTRIBUTION. Mexico. 1 sp.

*Anisospira* Strebel et Pfeffer, 1880

Strebel & Pfeffer in Strebel, 1880: 77.

TYPE SPECIES — *Cylindrella liebmanni* L. Pfeiffer, 1846; SD Pilsbry, 1903 (1902-1903).

Shell subcylindrical to obesely-fusiform, rather solid, of 6.5-11 (after decollation) moderately to slightly convex whorls. Color white to chestnut or reddish-brown. Embryonic whorls with distinct radial riblets appearing on 2nd half of 1st whorl. Postapical whorls finely sculptured with very regular riblets. Aperture rounded, adnate, with scarcely reflexed margins. Columella thin, with 1 or 2 smooth lamellae, confined to last 2-5 whorls; lower situated just above floor of whorl, blade- or cord-like, upper less developed (sometimes absent), occupying middle part of columella. Umbilicus absent or in form of short rim.

DISTRIBUTION. Mexico.

*Anisospira* (*Anisospira* s. str.)  
Fig. 563

Postembryonic sculpture of very fine threads or riblets; 4-7 thread-riblets per mm on antepenultimate whorl. Height 20-50, diam. 7-16 mm (30.7 × 11.8 mm).

Jaw arcuate, solid, smooth, with numerous very fine striae.

Vas deferens very long, strongly convoluted, entering epiphallus apically. Epiphallus long, subcylindrical. Penis small, internally with irregular smoothed folds; epiphallic pore surrounded with series of small, rounded tubercles. Penial retractor attached to short protrusion of upper part of penis. Free oviduct long, vagina very short. Spermathecal stalk not long, reservoir enormously long, with thin, transparent walls.

Thompson (1968) found in long, slender, vermiform diverticle of spermathecal stalk originating immediately above va-

gina *A. liebmanni*; in *A. velascorum*, I did not find a diverticle. Inside spermatheca, I discovered very long, thread-like spermatophore.

DISTRIBUTION. S and SW Mexico. 8 spp. & subspp.

*Anisospira* (*Trachycion*)  
Thompson, 1968  
Fig. 564

Thompson, 1968: 148.

TYPE SPECIES — *Anisospira recticosta townsendi* Pilsbry et Cockerell, 1903; OD.

Postembryonic sculpture of coarse ribs uniformly developed and evenly spaced: 3-5 ribs per mm on antepenultimate whorl. Height 31.0-42.2, diam. 9.5-14.8 mm.

DISTRIBUTION. W coast of Mexico. 3 spp. & 2 subspp.

*Dissotropis* Bartsch, 1906  
Fig. 565

Bartsch, 1906: 113 (*Anisospira* subg.).  
Thompson, 1968: 152.

TYPE SPECIES — *Anisospira* (*Dissotropis*) *stearnsi* Bartsch, 1906; OD.

Shell cylindrical-turritid, rather solid, of 8-10.5 (after decollation) slightly convex whorls. Color white to brown. Embryonic whorls smooth. Postembryonic sculpture of uniformly spaced radial ribs or threads. Aperture circular, with shortly reflexed margins. Columella more or less expanded, with wide serrated lamella confined to last 5 whorls; in juvenile shells columella with granular and spiny sculpture along central zone or on axial bulge which may be much reduced in adult shells. Umbilicus closed. Height 30-37, diam. 9.5-12.5 mm.

Jaw solid, with many moderate vertical ribs.

Talon short, globular. Vas deferens short, partially embedded in wall of vagina. Epiphallus enlarged, internally with 6 longitudinal fleshy folds. Penis large, bulbous, internally with 2 large fleshy pads (stimulators). Vagina large, with stout retractor originating from pharyngeal retractor. Spermathecal stalk long, reservoir elongated.

DISTRIBUTION. Mazatlan (Mexico). 5 spp.



? COELOCIONTINAE Iredale, 1937

Iredale, 1937: 306 (pro fam.).

— Coelociidae Nordsieck, 1986: 111 (provisionally in Orthalicoidea).

Shell decollated, medium-sized, tower-shaped. Aperture free throughout. Columella expanded, hollow, with pair of spiral lamellae; parietal lamella also present. Umbilicus relatively wide, with basal cord around it.

DISTRIBUTION. Australia (Queensland).

REMARK. If *Coelocion* was found in America or Caribbean region, nobody, I think, hesitates to attribute this genus to Urocoptidae: the only essential difference is the shape of aperture. But, as *Coelocion* occurs in the other hemisphere, its conchological similarity with Urocoptidae may have a convergent nature. Nordsieck (1986) referred to Coelociidae also the genus *Perrieria* Tapparone-Canefri, 1878 (New Guinea), but the shell of this monotypical genus has nothing common with *Coelocion*.

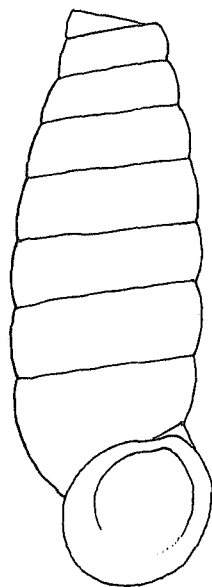


Fig. 564. ! *Anisospira (Trachycion) hadromyella* Thompson, 1968.  
After Thompson, 1968.

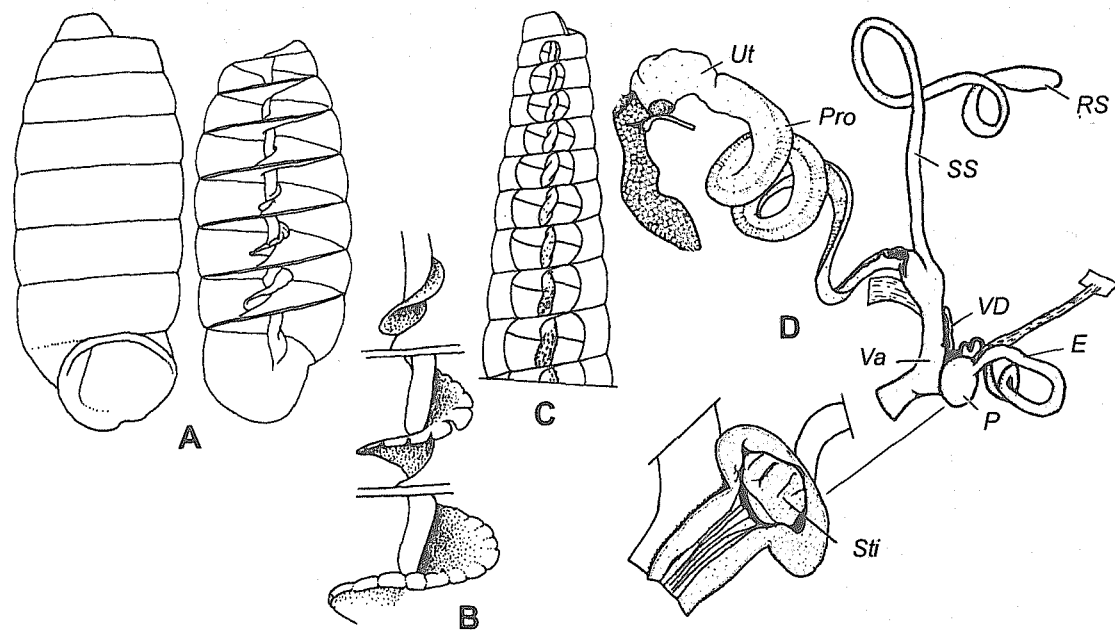


Fig. 565. A, B — *Dissotropis stearnsi* (Bartsch, 1906).

A — shell. B — columella. After Bartsch, 1906.

C, D — ! *Dissotropis castaneum* Thompson, 1968. C — columella in upper whorls. D — reproductive tract and interior of penis. After Thompson, 1968.

*Coelocion* Pilsbry, 1904

Fig. 566

Pilsbry, 1904 (1903-1904): 190.

TYPE SPECIES — *Balea australis* Forbes, 1851; monotypy.

Shell decollated, turrated, gradually tapering, moderately solid, of about 13 (after decollation) slightly convex whorls. Last whorl with cord-like basal keel. Color uniformly whitish to light corneous. Postembryonic whorls finely regularly ribbed. Aperture elongated-ovate, subvertical, entire, with slightly thickened margins. Columella wide, hollow, with 2 lamellae in two last whorls; upper continues in some more whorls. In addition, parietal lamella present in body whorl. Umbilicus rather broad. Height 15.7-22.0, diam. 4-5 mm (22.0 x 5.0 mm).

DISTRIBUTION. Australia (central Queensland). 1 sp.

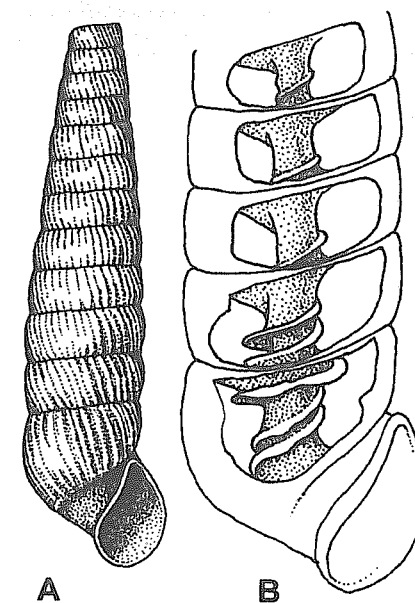


Fig. 566. *Coelocion australis* (Forbes, 1851).  
A — shell. B — structure of columella.  
North Pine River, Queensland [Australia].  
Phil. No. 63269.

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